PB90-234626

Final Response to BDAT Related Comments Document. K017/K028-K029 K095-096, K022, K025, K035, K026, K083, K024. Volume 1-M

(U.S.) Environmental Protection Agency, Washington, DC

May 90

U.S. Department of Commerce
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FINAL
RESPONSE TO BDAT RELATED COMMENTS DOCUMENT

K017: Wastes from the Production of Epychlorohydrin
K028, K029, K095, and K096: Production of 1,1,1-Trichloroethane
Wastewaters Containing BDAT Constituents
K022: Wastes from the Production of Phenol/Acetone
K025: Distillation Bottoms from the Production of Nitrobenzene
K035: WW Treatment Sludges from the Production of Creosote
K026: Stripping Still Tails from the Production of Methyl Ethyl Pyridine
K083: Distillation Bottoms from the Production of Aniline
Oxygenated Hydrocarbons and Heterocyclic U and P Wastes
F024: Production of Chlorinated Aliphatic Hydrocarbons

VOLUME I-M

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INTRODUCTION

This response to comments document only addresses those comments which were submitted on the proposed land disposal restrictions for those waste codes and general BDAT technologies and issues which relate to Third Third Wastes Treatment Standards.

The commenters presented in this document are grouped according to major concerns of the commenters. This document is comprised of the following sections:

ISSUE CODE 1: General BDAT Aspects
ISSUE CODE 2: D001 - Characteristic Ignitable Wastes
ISSUE CODE 3: D002 - Characteristic Corrosive Wastes
ISSUE CODE 4: D003 - Characteristic Reactive Wastes and P and U Wastes Containing Reactive Listing Constituents
ISSUE CODE 5: D004/D010 - Characteristic Wastes for Arsenic and Selenium and K, P, and U Wastes Containing Arsenic and Selenium
ISSUE CODE 6: D005 - Characteristic Wastes for Barium and P013
ISSUE CODE 7: D006 - Characteristic Wastes for Cadmium
ISSUE CODE 8: D007 - Characteristic Wastes for Chromium
ISSUE CODE 9: D008 - Characteristic Wastes for Lead P and U Wastes Containing Lead
ISSUE CODE 10: D009 - Characteristic Wastes for Mercury P and U Wastes Containing Mercury
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7. Author(s)

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This response to comments document only addreses those comments which were submitted on the proposed land disposal restrictions for those waste codes and general BDAT technologies and issues which related to Third Third Wastes Treatment STandards.
The commenters presented in this document are grouped according to major concerns of the commenters.

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ISSUE CODE 24: K011/K013/K014 - Acrylonitrile

ISSUE CODE 25: K015 - Still Bottoms from Benzal Chloride

ISSUE CODE 26: K021 - Spent Antimony Catalyst.

(No Comments Were Received for this Waste Code)

ISSUE CODE 27: K046 - WW Treatment Sludges from Manufacturing, Formulating, and Loading of Lead-Based Initiating Compounds

ISSUE CODE 28: K060 - Ammonia Still Lime Sludge.

(No Comments Were Received for this Waste Code)

ISSUE CODE 29: K061 - Electric Arc Furnace Dust

ISSUE CODE 30: K069 - Emission Control Dust/Sludge from Secondary Lead Smelting

ISSUE CODE 31: K071, K106 - Mercury Cell Process Wastes

ISSUE CODE 32: K073 - Chlorinated Hydrocarbon Wastes.

(No Comments Were Received for this Waste Code)

ISSUE CODE 33: K086 - Residues from Ink Formulation

ISSUE CODE 34: K100 - Waste Leaching Solution from Acid Leaching of Emission Control Dust/Sludge from Secondary Lead Smelting

(No Comments Were Received for this Waste Code)

ISSUE CODE 35: Wastes Containing Cyanide

ISSUE CODE 36: K017 - Wastes from the production of Epichlorohydrin

(No Comments Were Received for this Waste Code)

ISSUE CODE 37: K028,K029, K095, K096 - Production of 1,1,1-Trichloroethane

ISSUE CODE 38: Wastewaters containing BDAT Constituents

ISSUE CODE 39: K022 - Wastes from the Production of Phenol/Acetone

ISSUE CODE 40: K025 - Distillation Bottoms from the Production of Nitrobenzene

ISSUE CODE 41: K035 - WW Treatment Sludges from the Production of Creosote

ISSUE CODE 42: K026 - Stripping Still Tails from the Production of Methyl Ethyl Pyridine

(No Comments Were Received for this Waste Code)

ISSUE CODE 43: K083 - Distillation Bottoms from the Production of Aniline

ISSUE CODE 44: Oxygenated Hydrocarbons and Heterocyclic U and P Wastes

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(No Comments Were Received for this Waste Code)

ISSUE CODE 50: K037

(No Comments Were Received for this Waste Code)

ISSUE CODE 51: Leachates

ISSUE CODE 52: Gases

Commenters are identified by both commenter number and commenter name. Comments within each section of this document have been assigned a sequential comment number.

Issues were obtained from the original comment submittal and were categorized based on the grouping specified above. The Agency's response to each comment follows immediately after the text of the document. For responses related to capacity issues, the reader should review the "Response to Comments Background Document for the Third Third Land Disposal Restrictions Proposed Rule, November 22, 1989. Volume II Capacity Related Comments." For information regarding broad policy questions, the reader is directed to the "Response to Comments Background Document for the Third Third Land Disposal Restrictions Proposed Rule, November 22, 1989. Volume III Policy Related Comments."

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BT5
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Comment Number: 45-Cii-1
Docket Number: LD12-00247
Commenter: The BF Goodrich Company, Geon Vinyl Division
Issue: F024
Subissue: Definition of F024
Response:

The Agency points out to the commenter that because this comment is concerned with the listing definition of F024 and not with the proposed land disposal restrictions, responding to it as part of the Third Third rulemaking is not appropriate. As indicated in the December 11, 1989, Hazardous Waste Listing promulgated rule, technical questions pertaining to the listing definitions of F024 should be directed to Mr. John Austin in the Listing Section of the Office of Solid Waste. His address and phone number are:

Mr. John Austin
U.S. Environmental Protection Agency
OS-333
401 M Street S.W.
Washington, D.C. 20460
(202) 382-4789

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References

1. J. A. Cowfer and A. J. Magistro, Encyclopedia of Chemical Technology, V. 23, 3rd Ed., C 1983, John Wiley & Sons, Inc., pp 869-877.

2. R. T. Morrison and R. N. Boyd, "Organic Chemistry", 12th printing, Mar. 1965, C 1959, Allyn and Bacon, Inc., Boston, p 35.

3. Ibid, pp 185-186.

4. G. M. Barrow, Physical Chemistry, 2nd Ed., C 1966, McGraw-Hill, Inc. p 483.

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An example of a homogeneous catalyst is ferric chloride, which is used in our direct chlorination process as shown in equations 5 and 6. A good example of a heterogeneous catalyst is our Oxychlorination catalyst, which consists of $CuCl_2$ on alumina support (see equations 10-12). Note that in both of these examples the catalysts participate in the reactions but are regenerated and not consumed.

Comments

Following the above definitions, we do not have any "free radical catalyzed reactions" in our VCM manufacturing process. However we do have "free radical initiated reactions" in the EDC pyrolysis part of our VCM manufacturing process as shown by equations 13-15. One other example of a "free radical initiated reaction" is the formation of small amounts of 1,1,2-trichloroethane in our direct chlorination process as shown by equations 7-9.

liquid streams include light and heavy ends from EDC purification. These liquid by-product streams are combined to form an intermediate feedstock to our Catoxid process.

Catoxid is our fluidized-bed, catalytic oxidation process into which the combined liquid by-product streams are passed, along with air or oxygen-enriched air. The resulting product stream, consisting essentially of HCl, H_2O, N_2, O_2, and carbon oxides, is fed directly into an oxychlorination reactor where the HCl content is recovered as EDC. Further, the heat of reaction is recovered as high pressure steam via generation of steam in internal cooling coils within the fluidized bed of the Catoxid reactor.

Definition of Terms

A "free-radial"[2] is an atom or group of atoms possessing an odd (unpaired) electron.

> Therefore the chlorine atoms ($\dot{Cl}$) and the chloroethyl radicals ($CH_2Cl\dot{C}HCl$ and $CH_2Cl\dot{C}H_2$) in equations 8, 9, and 13-16 are all free radicals.

An "initiator"[3] is a substance which acts to start or trigger a reaction or reaction sequence and is itself consumed in the process.

> Peroxides are common initiators which function by first breaking down to form a free radical as in eq. 17. This radical can then add to a molecule of alkene, and in doing so generate another free radical as in eq. 18:

$$\text{Peroxide } (X\text{-}O\text{-}O\text{-}X) = 2X\dot{O} \qquad (17)$$

$$X\dot{O} + CH_2{=}CHR = XOCH_2\text{-}\dot{C}HR \qquad (18)$$

> This new radical can then add to another molecule of alkene to generate a still larger radical, which in turn can add to another molecule of alkene, and so on. Eventually the chain is terminated by steps that consume but do not generate radicals, such as the union of two radicals.

A "catalyst"[4] is a material that increases the rate of a chemical reaction without itself being used up.

$$2HCl + CuOCuCl_2 = 2CuCl_2 + H_2O \qquad (12)$$

Reaction selectivity to EDC is also very high in this process, but a small fraction of the ethylene feed is oxidized in the reactor to carbon oxides. Aside from carbon oxides, the main byproduct is, once again, 1,1,2-trichloroethane which is formed from EDC via cracking (dehydrochlorination) to vinyl chloride followed by oxychlorination. Subsequent cracking and oxychlorination steps lead progressively to by-products with higher levels of chlorine substitution but at lesser concentrations. All of these reactions are believed to take place on the surface of the fluidized bed catalyst as heterogeneous (vapor-solid) reactions.

Pyrolysis[1] or thermal cracking of EDC to vinyl chloride and hydrogen chloride occurs as a homogeneous, first-order free-radical chain reaction in the gas phase. The accepted general mechanism involves four elementary reaction steps as shown in equations 13-16:

Initiation $$ClCH_2CH_2Cl = ClCH_2\dot{C}H_2 + \dot{Cl} \qquad (13)$$

Propagation $$\dot{Cl} + ClCH_2CH_2Cl = ClCH_2\dot{C}HCl + HCl \qquad (14)$$

$$ClCH_2\dot{C}HCl = CH_2{=}CHCl + \dot{Cl} \qquad (15)$$

Termination $$\dot{Cl} + ClCH_2\dot{C}H_2 = ClCH{=}CH_2 + HCl \qquad (16)$$

Reactions 14 and 15 are the chain-propagation steps, because each elementary step consumes one of the two chain carriers and simultaneously produces the other. The net effect of reactions 14 and 15 is continuation of the chain reaction by conversion of EDC to vinyl chloride and hydrogen chloride. By-products from EDC pyrolysis can include acetylene, ethylene, methyl chloride, butadiene, vinyl acetylene, benzene, chloroprene, vinylidene chloride, 1,1-dichloroethane, chloroform, carbon tetrachloride, 1,1,1-trichloroethane, and other chlorination hydrocarbons. Pyrolysis furnace coke is also a by-product; coke is formed within the pyrolysis tubes via free radical coupling or polymerization reactions. Over time, the pyrolysis tubes can become fouled with coke build-up and the cracking furnaces (reactors) require periodic decoking procedures by either controlled oxidation or by mechanical cleaning.

By-products from the VCM manufacturing process include light gases, chlorinated hydrocarbon liquid streams, and some solids such as furnace coke, reboiler drillings, and inorganic sludge from waste water treatment. Light gases are collected and combusted in a thermal incinerator and then scrubbed. The organic

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In BFG's manufacturing process all of the HCl produced in ethylene dichloride pyrolysis is normally used as the feed for oxychlorination. On this basis, EDC production is about evenly split between direct chlorination and oxychlorination, and there is no net production or consumption of HCl.

Direct chlorination[1] of ethylene to ethylene dichloride is conducted by mixing ethylene and chlorine in liquid EDC. The reaction is a homogeneous catalytic reaction in the liquid phase with dissolved ferric chloride as the catalyst. The addition reaction proceeds through a polar mechanism, by which the catalyst may polarize chlorine, as shown in equation 5. The polarized chlorine molecule then acts as an electrophilic reagent to attack the double bond of ethylene, thus facilitating chlorine addition (eq. 6):

$$FeCl_3 + Cl_2 = FeCl_4^- \text{---} Cl^+ \qquad (5)$$

$$FeCl_4^- \text{---} Cl^+ + CH_2{=}CH_2 = FeCl_3 + CH_2ClCH_2Cl \qquad (6)$$

Although reaction selectivity to EDC is very high, a small fraction of the reaction proceeds to form more heavily chlorinated C_2's. The main byproduct is 1,1,2-trichloroethane, which probably forms through radical reactions beginning with homolytic dissociation of a small fraction of the chlorine as shown in equation 7. A chlorine atom then abstracts hydrogen from EDC to form HCl (eq. 8) and the remaining 1,2-dichloroethyl radical combines with the other chlorine atom to form 1,1,2-trichloroethane (eq. 9).

$$Cl_2 = 2\dot{C}l \qquad (7)$$

$$\dot{C}l + CH_2ClCH_2Cl = CH_2Cl\dot{C}HCl + HCl \qquad (8)$$

$$\dot{C}l + CH_2Cl\dot{C}HCl = CH_2ClCHCl_2 \qquad (9)$$

Oxychlorination[1] of ethylene to ethylene dichloride is conducted in the vapor phase by mixing ethylene with dry hydrogen chloride and air within a fluidized bed of copper chloride-on-alumina catalyst. Although the detailed catalytic mechanism is not known, copper (II) chloride is generally recognized as the active chlorinating agent. The copper (I) chloride produced during the ethylene chlorination step is rapidly reconverted to copper (II) chloride under reaction conditions. A very simple representation of this heterogeneous catalytic cycle is given in equations 10-12:

$$CH_2{=}CH_2 + 2CuCl_2 = 2CuCl + CH_2ClCH_2Cl \qquad (10)$$

$$1/2O_2 + 2CuCl = CuOCuCl_2 \qquad (11)$$

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ATTACHMENT 1

- Chemistry Utilized In BFG's Unit Operations for Manufacture of EDC & VCM and Definitions of "Free Radical", "Initiator", and "Catalyst".

Summary

I have described the chemistry utilized in BFG's unit operations for the manufacture of EDC and VCM at both LaPorte and Calvert City. These unit operations include chlorination of ethylene, oxychlorination of ethylene, pyrolysis of ethylene dichloride, and byproduct recovery via Catoxid. In addition, I have presented definitions and general usage of the terms "free radical", "initiator", and "catalyst". This information should assist in properly characterizing any waste material from our reactive processes.

Component Processes for Production of VCM

BFG produces VCM from ethylene, chlorine, and ethylene dichloride by combining the component processes of direct chlorination, oxychlorination, and EDC pyrolysis. The stoichiometric reactions representing each of the component processes are shown in equations 1-3 and the overall reaction is given by equation 4:

Direct Chlorination

$$CH_2{=}CH_2 + Cl_2 = CH_2ClCH_2Cl \qquad (1)$$

Oxychlorination

$$CH_2{=}CH_2 + 2HCl + 1/2O_2 = CH_2ClCH_2Cl + H_2O \qquad (2)$$

EDC Pyrolysis

$$2CH_2ClCH_2Cl = 2CH_2{=}CHCl + 2HCl \qquad (3)$$

Overall Reaction

$$2CH_2{=}CH_2 + Cl_2 + 1/2O_2 = 2CH_2{=}CHCl + H_2O \qquad (4)$$

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Comment Number: 45-Cii-1

Docket Number: LD12-00247

Commenter: The BF Goodrich Company, Geon Vinyl Division

Issue: F024

Subissue: Definition of F024

Comment:

The major commercial products produced by the "free radical catalyzed chemical manufacturing processes "are included in Table 2 (54 FR, Monday, December 11, 1989, p. 50569). BFGoodrich reviewed all of the chemistry associated with the manufacture of 1,2-dichloroethane and vinyl chloride monomer and concluded that our processes do not use any "free radical catalyzed manufacturing processes" and therefore do not generate any F024 or F025 designated wastes. Attached is the analysis of the chemistry by our Dr. Joseph A. Cowfer, Manager Intermediates supporting our determination. We again request these two chemical processes be deleted from Table 2.

cont.

Comment Number: 45-Ci-1
Docket Number: LD12-00247
Commenter: The BF Goodrich Company, Geon Vinyl Division
Issue: F024
Subissue: Definition of F024
Response:

The Agency reassures the commenter that it has not amended the RCRA definition of F024 to include wastewater. The wastewater treatment standards proposed for F024 are applicable to wastewater residuals "derived from" the treatment or storage (i.e., leaching) of nonwastewater forms of F024. If a chlorinated aliphatic hydrocarbon waste of concern is a wastewater as generated, neither it nor any wastewater treatment sludges resulting from treatment would be subject to the F024 treatment standards.

The Agency determined treatment standards for F024 based on the BDAT of incineration followed by stabilization of incinerator ash (a nonwastewater treatment residual) and chemical precipitation followed by vacuum filtration of scrubber water (a wastewater treatment residual). Establishing treatment standards for constituents in the wastewater treatment residual from incineration of F024 nonwastewater does not constitute redefining F024 to include wastewater.

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Comment Number: 45-Ci-1

Docket Number: LD12-00247

Commenter: The BF Goodrich Company, Geon Vinyl Division

Issue: F024

Subissue: Definition of F024

Comment:

These Best Demonstrated Available Technology (BDAT) treatment standards for F024, and the BDAT Background Document for F024 (December, 1988) included wastewater, although the RCRA definition of F024 waste specifically excludes wastewaters. 40 CFR Section 261.31. The proposal (54 FR 1063, January 11, 1989) defined wastewaters as wastes which contain less than 1% total suspended solids and less than 1% total organic carbon (TOC) and then classified all other wastes as nonwastewaters. Furthermore, inclusion of wastewaters in the F024 listing would not only be a redefinition of the RCRA but a direct contradiction of the specific provisions for "derived from" wastes or "mixture" wastes (51 FR 40579, November 7, 1986). The U.S. EPA needs to either clarify the language to clearly indicate that wastewater is not a F024 waste or delete the ambiguous language from the preamble.

Therefore there remains ambiguity surrounding the use of the term "wastewaters" in connection with F024 wastes in the proposed rule (54 FR at 26615-26617, June 23, 1989).

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Comment Number: 45-Ci-1

Docket Number: LD12-00247

Commenter: The BF Goodrich Company, Geon Vinyl Division

Issue: F024

Subissue: Definition of F024

Comment:

EPA published a Notice of Proposed Rulemaking (NPR) to prohibit the land disposal of certain untreated hazardous wastes listed in 40 CFR 268.11 (the second third of the schedule of restricted hazardous wastes) (54 FR 1056, January 11, 1989). The preamble to the proposal states several times that EPA was adding to the list of wastes whose land disposal would be prohibited as a result of the Hazardous and Solid Waste Amendments of 1984. There was no indication that EPA was proposing to amend the existing definitions of the wastes being further regulated.

The language of the proposed rule was consistent with this approach. Proposed amendments to 40 CFR Section 148.15 and 268.34 referred only to F024. More pointedly, proposed amendments to Section 268.41 referred specifically to "F024 nonwastewaters." Thus, the proposed regulatory language would not advise potentially affected persons that any change of the F024 definition was being proposed.

Despite all this, one page of the preamble (54 FR at 1072) suggested that EPA was proposing to amend the definition of F024 wastes. The Agency addressed the Best Demonstrated Available Technology (BDAT) treatment standards for F024 "wastewaters". The discussion also referred to "chemical precipitation followed by vacuum filtration for the "wastewater F024" as "available to treat F024".

(cont)

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Comment Number: 45-Ci-1

Docket Number: LD12-00247

Commenter: The BF Goodrich Company, Geon Vinyl Division

Issue: F024

Subissue: Definition of F024

Comment:

> **Both the Interim Final Rule for F024 (40 CFR 261.31 (54 FR 5308, February 10, 1984) and the Final Rule for F024 (54 FR 50977, December 11, 1989) exclude wastewater and wastewater treatment sludges in their definitions.**
>
> **54 FR 5308, February 10, 1984**
>
> **F024.... Wastes, including but not limited to, distillation residues, heavy ends, tars and reactor clean-out wastes from the production of chlorinated aliphatic hydrocarbons, having carbon content from one to five, utilizing free radical catalyzed processes. (This listing does not include light ends, spent filters and filter aids, spent desiccants, wastewater, wastewater treatment sludges, spent catalysts and wastes listed in Section 261.32.)**
>
> **54 FR 50977, December 11, 1989**
>
> **F024.... Process wastes, including but not limited to, distillation residues, heavy ends, tars and reactor clean-out wastes, from the production of certain chlorinated aliphatic hydrocarbons by free radical catalyzed processes. These chlorinated aliphatic hydrocarbons are those having carbon chain lengths ranging from one to and including five with varying amounts of positions of chlorine substitution. (This listing does not include wastewaters, wastewater treatment sludges, spent catalysts and wastes listed in Section 261.31 or Section 261.32.)**

(cont.)

Comment Number: 45-B-1
Docket Number: LD12-00128
Commenter: Vulcan Chemicals
Issue: F024
Subissue: BDAT for nonwastewater organics
Response:

The Agency reminds the commenter that the use of other treatment technologies that can achieve the concentration-based treatment standards promulgated for organic constituents in F024 is not precluded by the Second Third rule (54 FR 26615). Liquid injection incineration and fluidized-bed incineration may provide equivalent levels of treatment to rotary kiln incineration for organic constituents in F024 and are both identified as applicable and demonstrated BDAT equivalent technologies for liquid and solid forms of F024, respectively, in the Final BDAT Background Document for F024.

Comment Number: 45-B-1

Docket Number: LD12-00128

Commenter: Vulcan Chemicals

Issue: F024

Subissue: BDAT for nonwastewater organics

Comment:

The Agency has indicated that based on the performance of rotary kiln incineration, that concentration-based treatment standards were promulgated in June, 1989. More recent data has indicated that stabilization of F024 incinerator ash appears to represent BDAT and results in a substantial reduction in metals observed in TCLP analyses. Vulcan has no problems with the use of stabilization of F024 incinerator ash as BDAT for metals in F024 nonwastewaters or incinerator ash. We are concerned with the references to the use of rotary kiln incineration as BDAT for the organic phase of nonwastewaters for F024 and other halogenated aliphatic and aromatic hydrocarbons. Although rotary kiln incineration is certainly a technology well adapted to the destruction of halogenated organics, other forms of incineration, e.g. liquid and gas phase incinerators, are also equally appropriate technology for the destruction of organic materials and should also be considered as representing BDAT for halogenated hydrocarbons.

Comment Number: 45-Aiii-1
Docket Number: LD12-00172
Commenter: Hazardous Waste Treatment Council
Issue: F024
Subissue: Treatment standards for nonwastewater organics
Response:

(Continued)

(i.e., a laboratory is unable to achieve PQLs below the treatment standards for specific treatment residuals), the facility may submit a petition for a variance from the treatment standards for that particular waste.

Comment Number: 45-Aiii-1
Docket Number: LD12-00172
Commenter: Hazardous Waste Treatment Council
Issue: F024
Subissue: Treatment standards for organics
Response:

As discussed in EPA's Test Methods for Evaluating Solid Waste (SW-846), practical quantitation limits (PQLs) are directly related to the amount of interferences that are present in a waste matrix, and therefore are matrix-specific values. The PQLs suggested by the commenter were determined from testing a variety of non-F024 nonwastewater matrices and are not specifically applicable to F024 incinerator ash. PQLs are established to provide guidance for the analysis of waste samples by acting as minimum performance criteria for analytical laboratories. The PQLs given in SW-846 do not necessarily represent the lowest limits of analytical performance achievable for any given waste. In fact, some laboratories may be able to routinely measure concentration levels far below the PQLs. Additionally, the Agency has analytical results for 2-chloro-1,3-butadiene, which were obtained using a calibration standard for this compound.

The incinerator ash generated from treatment of F024 was analyzed using standard SW-846 analytical methods. Further, the laboratory used for this analysis is commercially available and maintains compliance with EPA's quality assurance/quality control requirements for the Land Disposal Restrictions Program. Therefore, the Agency believes that the treatment standards developed based on these data appropriately reflect the level of treatment and analytical performance routinely achievable for these nonwastewater organic constituents in F024.

The Agency has not received any incineration treatment performance data from the regulated community for F024 indicating that the previously promulgated treatment standards for nonwastewater organics cannot be met. Therefore, the Agency has no reason to believe that the treatment standards promulgated for organic constituents in nonwastewater forms of F024 cannot be reliably met on a routine basis, and is not revising these standards at this time. In cases where a facility cannot make this determination because its F024 matrix differs significantly from the wastes analyzed in developing the treatment standard

Comment Number: 45-Aiii-1

Docket Number: LD12-00172

Commenter: Hazardous Waste Treatment Council

Issue: F024

Subissue: Treatment standards for nonwastewater organics

Comment:

In addition to the Dioxin standards, EPA should revised the other non-wastewater treatment standards that are currently set below PQLs. These standards should be revised consistent with the HWTC interlaboratory study, to levels tabulated below (see PQLs reported in Tables IV-3, IV-4, and VI-5 of the HWTC study submitted to Docket LD12 on 1/8/90.

Constituent	Proposed New BDAT Standard Based On PQL, mg/kg Non-Wastewaters
2-Chloro-1,3-butadiene	delete - no calibration std available
3-chloropropene	9.9
1,1-Dichloroethane	3.9
1,2-Dichloroethane	3.1
1,2-Dichloropropane	2.7
cis-1,3-Dichloropropene	2.8
trans-1,3-Dichloropropene	2.7
Bis(2-ethylhexyl) phthalate	79
Hexachloroethane	113

The fact that EPA has proposed changes for the BDAT standards for F024 in the Third Thirds proposed rule, and the fact that the HWTC Interlaboratory Study on PQLs is being circulated as comments for the 21 day comment period, makes changes to these other F024 standards in the final promulgate third thirds rule valid and consistent with required rulemaking procedures.

Comment Number: 45-Aii-2
Docket Number: LD12-00172
Commenter: Hazardous Waste Treatment Council
Issue: F024
Subissue: Treatment standards for metals
Response:

Nickel, chromium, and lead were present at treatable levels in the untreated F024 tested by the Agency and used as a basis for setting F024 BDAT treatment standards. EPA conducted stabilization tests using commercially available binders on the ash resulting from the incineration of F024. The data obtained from these tests showed substantial treatment of nickel, chromium, and lead in the F024 incinerator ash; these data were used to develop BDAT treatment standards for these constituents. The laboratory that analyzed the stabilized F024 ash samples is commercially available and maintains compliance with EPA's quality assurance/quality control requirements for the Land Disposal Restrictions Program. Therefore, the Agency believes that the treatment standards developed from these data appropriately reflect the level of treatment and analytical performance routinely achievable for these nonwastewater metal constituents in F024. The Agency has not received any stabilization treatment performance data from the regulated community for treatment residues of F024 or of F024 co-burned with other wastes indicating that the proposed treatment standards cannot be met. Therefore, the Agency has no reason to believe that the treatment standards proposed for nickel, chromium, and lead in nonwastewater forms of F024 cannot be reliably met on a routine basis, and is promulgating the treatment standards as proposed.

Comment Number: 45-Aii-2

Docket Number: LD12-00172

Commenter: Hazardous Waste Treatment Council

Issue: F024

Subissue: Treatment standards for metals

Comment:

We would also recommend that EPA review closely its proposed metal treatment standards for F024. Those extremely low levels would probably effectively preclude the wastes from being accepted. Not only would the low levels prevent the waste from being co-burned with other wastes, but they would raise serious risks about the treatability of any subsequent incinerator clean-out ash and slag.

Comment Number: 45-Aii-1
Docket Number: LD12-00124
Commenter: Rollins Environmental Services (DE) Inc.
Issue: F024
Subissue: Treatment standards for metals
Response:

Nickel, chromium, and lead were present at treatable levels in the untreated F024 tested by the Agency and used as a basis for setting F024 BDAT treatment standards. EPA conducted stabilization tests using commercially available binders on the ash resulting from the incineration of F024. The data obtained from these tests showed substantial treatment of nickel, chromium, and lead in the F024 incinerator ash; these data were used to develop BDAT treatment standards for these constituents. The laboratory that analyzed the stabilized F024 ash samples is commercially available and maintains compliance with EPA's quality assurance/quality control requirements for the Land Disposal Restrictions Program. Therefore, the Agency believes that the treatment standards developed from these data appropriately reflect the level of treatment and analytical performance routinely achievable for these nonwastewater metal constituents in F024. The Agency has not received any stabilization treatment performance data from the regulated community for treatment residues of F024 or of F024 co-burned with other wastes indicating that the proposed treatment standards cannot be met. Therefore, the Agency has no reason to believe that the treatment standards proposed for nickel, chromium, and lead in nonwastewater forms of F024 cannot be reliably met on a routine basis, and is promulgating the treatment standards as proposed.

Comment Number: 45-Aii-1

Docket Number: LD12-00124

Commenter: Rollins Environmental Services (DE) Inc.

Issue: F024

Subissue: Treatment standards for metals

Comment:

We also recommend that EPA review closely its proposed chromium, **lead and nickel treatment standards** for F024 (and K028). **Those extremely** low **levels** would probably **effectively** preclude the **wastes** from **being** accepted. Not only would the low levels prevent **the waste** from being co-burned **with other wastes**, but they would raise serious **risks** about the treatability of any subsequent incinerator clean-out ash and slag.

Comment Number: 45-Aib-3
Docket Number: LD12-00238
Commenter: Vista Chemical Company
Issue: F024
Subissue: Treatment standards for dioxins and furans
Response:

(Continued)

of the wastes containing the chlorinated dibenzodioxin and dibenzofuran constituents.

Since promulgation of the Second Third Rule, it has come to the Agency's attention that treatment firms are refusing to accept F024 largely due to the analytical costs to determine compliance with the concentration-based treatment standards for chlorinated dibenzodioxins and dibenzofurans and the perceived stigma of managing wastes containing these constituents. In response, the Agency is deleting the chlorinated dibenzodioxins and dibenzofurans as regulated constituents and is revising the concentration-based treatment standards promulgated for the volatile and semivolatile organic constituents in F024 in the Second Third Rule (54 FR 26594, 26615) to require that these concentration-based treatment standards be achieved using incineration technologies. As such, treaters of F024 will not be required to analyze either the untreated F024 or the treated residuals for the chlorinated dibenzodioxin and dibenzofuran constituents. The Agency believes these revisions will allay the treatment firms' concerns with accepting F024. Additionally, the revised standards will reduce the analytical costs associated with compliance with this rule.

As discussed in the Final BDAT Background Document for F024, incineration is the BDAT technology for organic constituents in nonwastewater and wastewater forms of F024. EPA is specifying that the concentration-based treatment standards for F024 must be met via incineration because the Agency believes that incineration technologies will effectively destroy any of the chlorinated dibenzodioxins and dibenzofurans that may be present in F024, based on the results obtained from the EPA-sponsored incineration treatment test of F024 wastes containing these constituents. This regulatory approach should ensure that sufficient incineration capacity is available to treat F024 and that F024 is treated before land disposal to levels that adequately protect human health and the environment.

Comment Number: 45-Aib-3
Docket Number: LD12-00238
Commenter: Vista Chemical Company
Issue: F024
Subissue: Treatment standards for dioxins and furans
Response:

EPA has considered the commenter's concerns and approach to identifying a surrogate constituent for ensuring control of the chlorinated dibenzodioxins and dibenzofurans proposed for regulation in nonwastewater and wastewater forms of F024.

In selecting constituents for regulation, the Agency considers, among other factors, the relative difficulty involved in treating each constituent by the treatment technology identified as BDAT. Waste characteristics affecting the performance of the treatment technology are used for this purpose. For incineration technologies, these characteristics are a constituent's boiling point for nonwastewater residuals, and its bond dissociation energy (BDE) for wastewater residuals. The boiling points and BDEs for the surrogate constituent suggested by Vista are listed below, along with those for the chlorinated dibenzodioxins and dibenzofurans regulated in F024.

Constituent	Boiling Point (°C)	BDE (kcal/mole)
1,2-Dichloroethane	83-84	645
Hexachlorodibenzo-p-dioxins	400-500	2,470
Hexachlorodibenzofurans	400-500	960
Pentachlorodibenzo-p-dioxins	400-500	2,490
Pentachlorodibenzofurans	400-500	980
Tetrachlorodibenzofurans	400-500	1,000

Constituents with higher boiling points and higher BDEs are considered to be more difficult to treat than those with lower boiling points and lower BDEs for nonwastewater and wastewater residuals, respectively. As evidenced by the data in the above table, the surrogate constituent suggested by Vista would not be considered more difficult to treat than the chlorinated dibenzodioxins and dibenzofurans, and therefore would not effectively ensure control of these constituents. The Agency also attempted to identify surrogates, but was unable to identify an appropriate surrogate that was present at treatable levels in all

Comment Number: 45-Ai b-~~10~~3

Docket Number: LD12-00238

Commenter: Vista Chemical Company

Issue: F024

Subissue: Treatment standards for dioxins and furans

Comment:

Regarding the treatment standards for F024 wastes, Vista has sampled the F024 waste streams generated since the June 23 Second Third final rule and determined that there were no detectable chlorinated dibenzo furans or dioxins present. (See Attached) As can be seen there were significant amounts of 1,2 dichloroethane (EDC) present. On the basis of these results Vista proposes that EDC is a suitable surrogate parameter for the chlorinated dibenzo furans and dioxins.

(Note: data were not attached, as indicated, in the comments received by the docket.)

Comment Number: 45-Aib-2
Docket Number: LD12-00128
Commenter: Vulcan Chemicals
Issue: F024
Subissue: Treatment standards for dioxins and furans
Response:

The Agency may elect not to regulate every BDAT List constituent that is present or suspected to be present in a waste. Frequently, EPA selects an appropriate subset of constituents for regulation in order to facilitate compliance and enforcement. This subset of constituents is selected to ensure that other constituents of concern are adequately treated when the treatment standards for the regulated constituents are met. The Agency does not believe that the surrogates suggested for the chlorinated dibenzodioxins and dibenzofurans by the commenter were appropriate because they were not more difficult to treat than the chlorinated dibenzodioxin and dibenzofuran constituents and therefore would not ensure adequate treatment of these constituents. The Agency also attempted to identify surrogates, but was unable to identify an appropriate surrogate that was present at treatable levels in all of the wastes containing the chlorinated dibenzodioxin and dibenzofuran constituents. However, as mentioned previously, the Agency is deleting these constituents from regulation and is requiring that the previously-promulgated concentration-based treatment standards for organic constituents be achieved using incineration technologies. In this manner, the Agency believes that treatment firms' concerns with accepting F024 will be allayed while any of the chlorinated dibenzodioxins and dibenzofurans that may be present in the waste will be effectively destroyed.

Comment Number: 45-A~~i~~b-02

Docket Number: LD12-00128

Commenter: Vulcan Chemicals

Issue: F024

Subissue: Treatment standards for dioxins and furans

Comment:

EPA requested comment on whether the achievement of the treatment standards for F024 or other organic waste would be indicative that the treatment standards for chlorinated dioxins and dibenzofurans would also be achieved. Based on Vulcan's experience with trial burns with its liquid incinerator, the level of dioxins and furans in the incinerator emissions and the incinerator ash have been quite low and would meet the treatment standard for the chlorinated dioxins and dibenzofurans. Therefore, Vulcan supports the option which would encompass the dioxins and furans in the treatment standard for F024 nonwastewater and wastewaters.

Comment Number: 45-Aib-1

Docket Number: LD12-00172

Commenter: Hazardous Waste Treatment Council

Issue: F024

Subissue: Treatment standards for dioxins and furans

Response:

(Continued)

F024 must be met via incineration because the Agency believes that incineration technologies will effectively destroy any of the chlorinated dibenzodioxins and dibenzofurans that may be present in F024, based on the results obtained from the EPA-sponsored incineration treatment test of F024 wastes containing these constituents. This regulatory approach should ensure that sufficient incineration capacity is available to treat F024 and that F024 is treated before land disposal to levels that adequately protect human health and the environment.

Comment Number: 45-Aib-1
Docket Number: LD12-00172
Commenter: Hazardous Waste Treatment Council
Issue: F024
Subissue: Treatment standards for dioxins and furans
Response:

(Continued)

considered more difficult to treat than the chlorinated dibenzodioxins and dibenzofurans, and therefore would not effectively ensure control of these constituents. The Agency also attempted to identify surrogates, but was unable to identify an appropriate surrogate that was present at treatable levels in all of the wastes containing the chlorinated dibenzodioxin and dibenzofuran constituents.

Since promulgation of the Second Third Rule, it has come to the Agency's attention that treatment firms are refusing to accept F024 largely due to the analytical costs to determine compliance with the concentration-based treatment standards for chlorinated dibenzodioxins and dibenzofurans and the perceived stigma of managing wastes containing these constituents. In response, the Agency is deleting the chlorinated dibenzodioxins and dibenzofurans as regulated constituents and is revising the concentration-based treatment standards promulgated for the volatile and semivolatile organic constituents in F024 in the Second Third Rule (54 FR 26594, 26615) to require that these concentration-based treatment standards be achieved using incineration technologies. As such, treaters of F024 will not be required to analyze either the untreated F024 or the treated residuals for the chlorinated dibenzodioxin and dibenzofuran constituents. The Agency believes these revisions will allay the treatment firms' concerns with accepting F024. Additionally, the revised standards will reduce the analytical costs associated with compliance with this rule.

As discussed in the Final BDAT Background Document for F024, incineration is the BDAT technology for organic constituents in nonwastewater and wastewater forms of F024. EPA is specifying that the concentration-based treatment standards for

Comment Number: 45-Aib-1
Docket Number: LD12-00172
Commenter: Hazardous Waste Treatment Council
Issue: F024
Subissue: Treatment standards for dioxins and furans
Response:

EPA has considered the commenter's concerns and thorough approach to identifying surrogate constituents for ensuring control of the chlorinated dibenzodioxins and dibenzofurans proposed for regulation in nonwastewater and wastewater forms of F024.

In selecting constituents for regulation, the Agency considers, among other factors, the relative difficulty involved in treating each constituent by the treatment technology identified as BDAT. Waste characteristics affecting the performance of the treatment technology are used for this purpose. For incineration technologies, these characteristics are a constituent's boiling point for nonwastewater residuals, and its bond dissociation energy (BDE) for wastewater residuals. The boiling points and BDEs for the surrogate constituents suggested by HWTC are listed below, along with those for the chlorinated dibenzodioxins and dibenzofurans regulated in F024.

Constituent	Boiling Point (°C)	BDE (kcal/mole)
Hexachlorobenzene	323-326	1,305
1,3-Dichlorobenzene	173	1,295
1,2-Dichlorobenzene	180.5-181	1,295
1,4-Dichlorobenzene	174-174.1	1,295
1,2,4-Trichlorobenzene	213	1,320
Hexachlorodibenzo-p-dioxins	400-500	2,470
Hexachlorodibenzofurans	400-500	960
Pentachlorodibenzo-p-dioxins	400-500	2,490
Pentachlorodibenzofurans	400-500	980
Tetrachlorodibenzofurans	400-500	1,000

Constituents with higher boiling points and higher BDEs are considered to be more difficult to treat than those with lower boiling points and lower BDEs for nonwastewater and wastewater residuals, respectively. As evidenced by the data in the above table, the surrogate constituents suggested by HWTC would not be

2 of 2

Comment Number: 45-Aib-~~0~~1

Docket Number: LD12-00172

Commenter: Hazardous Waste Treatment Council

Issue: F024

Subissue: Treatment standards for dioxins and furans

Comment:

Levels of each of these constituents were detected in untreated waste to as high as 1.8%. The constituents are appropriate surrogates as they are listed as Dioxin Precursors by EPA (see EPA Publication 600/2-80-197, page 43).

If these constituents were not deleted in the residues of the F024 waste study, although detected in the untreated waste, EPA can apply the BDAT standards based on PQLs for these compounds from the HWTC Interlaboratory Study on Incinerator Ash matrices submitted to the docket LDR12 on January 8, 1990. The specific treatment standards would therefore be as follows:

Dioxin Surrogate Constituent	**Recommended BDAT Treatment Standard Based On PQL***
Hexachlorobenzene	2.32
1,2-Dichlorobenzene	13.9
1,3-Dichlorobenzene	5.8
1,4-Dichlorobenzene	14.0
1,2,4-Trichlorobenzene	24.1

* Nonwastewater treatment standard expressed on a mg/kg basis (see Tables IV-3, IV-4 and VI-5 in HWTC PQL study).

These levels would be equivalent to non-detect levels in the treatment residue.

1 of 2

Comment Number: 45-Aib-~~4~~1

Docket Number: LD12-00172

Commenter: Hazardous Waste Treatment Council

Issue: F024

Subissue: Treatment standards for dioxins and furans

Comment:

EPA notes that it has received anecdotal information that some incineration firms are refusing to treat F024 wastes because the treatment standards include standards for various dioxins and furans (Preamble p. 48450). Virtually all commercial hazardous waste incineration companies are members of the HWTC. None of our members have accepted F024 since the standards were specified, nor do they intend to, for the very reason indicated by the EPA comment. Further, we believe that if the other organic standards for F024 are met, the residue can be expected not to contain dioxins or furans and those standards can therefore be dropped. As a suitable surrogate for dioxins, the HWTC recommends that EPA technology transfer treatment standards for the following constituents.

Constituent	Waste Code With Standard Suitable For Tech Transfer
Hexachlorobenzene	F025, K016, K018
1,3-Dichlorobenzene	K085, K096, K030, K043
1,2-Dichlorobenzene	K085, K096, K030
1,4-Dichlorobenzene	K085, K096, K030
1,2,4-Trichlorobenzene	K030

These constituents were detected in the untreated F024 wastes analyzed by EPA in the Second-Thirds rule (*see* BDAT Background Document for F024, December 1988 - RCRA Docket LD10).

(cont.)

Comment Number: 45-Aia-7

Docket Number: LD12-00247

Commenter: The BF Goodrich Company, Geon Vinyl Division

Issue: F024

Subissue: Treatment standards for dioxins and furans

Response:

Since promulgation of the Second Third Rule, it has come to the Agency's attention that treatment firms are refusing to accept F024 largely due to the analytical costs to determine compliance with the concentration-based treatment standards for chlorinated dibenzodioxins and dibenzofurans and the perceived stigma of managing wastes containing these constituents. In response, the Agency is deleting the chlorinated dibenzodioxins and dibenzofurans as regulated constituents and is revising the concentration-based treatment standards promulgated for the volatile and semivolatile organic constituents in F024 in the Second Third Rule (54 FR 26594, 26615) to require that these concentration-based treatment standards be achieved using incineration technologies. As such, treaters of F024 will not be required to analyze either the untreated F024 or the treated residuals for the chlorinated dibenzodioxin and dibenzofuran constituents. The Agency believes these revisions will allay the treatment firms' concerns with accepting F024. Additionally, the revised standards will reduce the analytical costs associated with compliance with this rule.

As discussed in the Final BDAT Background Document for F024, incineration is the BDAT technology for organic constituents in nonwastewater and wastewater forms of F024. EPA is specifying that the concentration-based treatment standards for F024 must be met via incineration because the Agency believes that incineration technologies will effectively destroy any of the chlorinated dibenzodioxins and dibenzofurans that may be present in F024, based on the results obtained from the EPA-sponsored incineration treatment test of F024 wastes containing these constituents. This regulatory approach should ensure that sufficient incineration capacity is available to treat F024 and that F024 is treated before land disposal to levels that adequately protect human health and the environment. This issue is discussed in more detail in the response to comment 45-Aib-1.

Comment Number: 45-Aia-87

Docket Number: LD12-00247

Commenter: The BF Goodrich Company, Geon Vinyl Division

Issue: F024

Subissue: Treatment standards for dioxins and furans

Comment:

We have discussed with various waste disposal firms their position on accepting hazardous waste streams generated by our facilities. During those conversations, they indicated they would not accept any waste stream which would either require extraordinary testing, have adverse public comment or would potentially lead to testing all or part of their incinerator ash for chlorinated dibenzo dioxins and furans. Since the F024 treatment standards require such testing, they would refuse to take F024 wastes. The firms contacted which would not accept F024 waste for incineration include Chemical Waste Management-Chicago, Illinois, Rollins-Houston, Texas and Liquid Waste Disposal (LWD)-Calvert City, Kentucky.

Comment Number: 45-Aia-6

Docket Number: LD12-00238

Commenter: Vista Chemical Company

Issue: F024

Subissue: Treatment standards for dioxins and furans

Response:

Since promulgation of the Second Third Rule, it has come to the Agency's attention that treatment firms are refusing to accept F024 largely due to the analytical costs to determine compliance with the concentration-based treatment standards for chlorinated dibenzodioxins and dibenzofurans and the perceived stigma of managing wastes containing these constituents. In response, the Agency is deleting the chlorinated dibenzodioxins and dibenzofurans as regulated constituents and is revising the concentration-based treatment standards promulgated for the volatile and semivolatile organic constituents in F024 in the Second Third Rule (54 FR 26594, 26615) to require that these concentration-based treatment standards be achieved using incineration technologies. As such, treaters of F024 will not be required to analyze either the untreated F024 or the treated residuals for the chlorinated dibenzodioxin and dibenzofuran constituents. The Agency believes these revisions will allay the treatment firms' concerns with accepting F024. Additionally, the revised standards will reduce the analytical costs associated with compliance with this rule.

As discussed in the Final BDAT Background Document for F024, incineration is the BDAT technology for organic constituents in nonwastewater and wastewater forms of F024. EPA is specifying that the concentration-based treatment standards for F024 must be met via incineration because the Agency believes that incineration technologies will effectively destroy any of the chlorinated dibenzodioxins and dibenzofurans that may be present in F024, based on the results obtained from the EPA-sponsored incineration treatment test of F024 wastes containing these constituents. This regulatory approach should ensure that sufficient incineration capacity is available to treat F024 and that F024 is treated before land disposal to levels that adequately protect human health and the environment. This issue is discussed in more detail in the response to comment 45-Aib-1.

2 of 2

Comment Number: 45-A~~i~~a-76

Docket Number: LD12-00238

Commenter: Vista Chemical Company

Issue: F024

Subissue: Treatment standards for dioxins and furans

Comment:

The possibility of a "Case by Case Extension" as allowed by 40 CFR 268.5 has also been pursued with various vendors. However, since the problems as identified above could still exist in two years, vendors were not willing to enter into a binding contract at this time. Vista has been unable to determine that there is any treatment capacity for F024 wastes.

Vista is a generator of F024 wastes and has limited storage capacity. The fact that there is no available treatment capacity, has caused us undue storage problems. Vista was forced to seek an extension of the "90 day rule" from the State of Louisiana to allow time to find alternate storage facilities this past July. We now find that our only alternative is to store these materials in a properly permitted commercial RCRA facility until the treatment capacity issue is settled. This is an extra burden financially and administratively for Vista. The long-term availability of this third party storage capacity is uncertain at this time, and it is not inconceivable that this option would no longer be available in the near future. If this were to occur, Vista would eventually be forced to shut the Vinyl Chloride Monomer unit down, seriously affecting a major portion of Vista's business.

1 of 2

Comment Number: 45-Aia-76

Docket Number: LD12-00238

Commenter: Vista Chemical Company

Issue: F024

Subissue: Treatment standards for dioxins and furans

Comment:

In the November 22, 1989 Federal Register on page 48450, the Agency solicited comments on the treatment capacity and the treatment standards for the listed waste F024. Vista Chemical company (Vista) is a manufacturer of 1,2 dichloroethane (EDC) by the direct chlorination and the oxychlorination processes. Vinyl chloride monomer is subsequently produced through the thermal cracking of EDC into vinyl chloride and anhydrous HCl. As a result of these processes, waste materials are generated which meet the listed definition of F024 waste. Vista as a generator of F024 wastes, respectfully submits these comments regarding the F024 treatment standards and treatment capacity problems which have arisen.

First, let me thank the Agency for opening this issue for formal comments. This indeed is a serious situation which began on the effective date of the Second Third final rule, June 23, 1989. Very shortly thereafter the major hazardous waste vendors refused to accept F024 wastes for treatment. ENSCO declined approval for our F024 profile on July 12; CWMI and Rollins also declined shortly thereafter. I discussed the capacity problem with Mr. Jim Burlow of your Washington office on July 18.

When questioned for the reasons of rejection, the vendors responded relaying a series of difficulties which the F024 treatment standards caused, either directly or indirectly. At first there appeared to be concern, by the vendors regarding the achievability of the chlorinated dibenzo furans and dioxins treatment standards. Ash disposal problems were also cited as reasons for not accepting our F024 wastes. The possibility of segregating waste streams and dedicating a kiln for a specific F024 campaign was investigated but was determined to be both impractical and unreasonably expensive.

(cont.)

Comment Number: 45-Aia-5

Docket Number: LD12-00221

Commenter: The Vinyl Institute

Issue: F024

Subissue: Treatment standards for dioxins and furans

Response:

Since promulgation of the Second Third Rule, it has come to the Agency's attention that treatment firms are refusing to accept F024 largely due to the analytical costs to determine compliance with the concentration-based treatment standards for chlorinated dibenzodioxins and dibenzofurans and the perceived stigma of managing wastes containing these constituents. In response, the Agency is deleting the chlorinated dibenzodioxins and dibenzofurans as regulated constituents and is revising the concentration-based treatment standards promulgated for the volatile and semivolatile organic constituents in F024 in the Second Third Rule (54 FR 26594, 26615) to require that these concentration-based treatment standards be achieved using incineration technologies. As such, treaters of F024 will not be required to analyze either the untreated F024 or the treated residuals for the chlorinated dibenzodioxin and dibenzofuran constituents. The Agency believes these revisions will allay the treatment firms' concerns with accepting F024. Additionally, the revised standards will reduce the analytical costs associated with compliance with this rule.

As discussed in the Final BDAT Background Document for F024, incineration is the BDAT technology for organic constituents in nonwastewater and wastewater forms of F024. EPA is specifying that the concentration-based treatment standards for F024 must be met via incineration because the Agency believes that incineration technologies will effectively destroy any of the chlorinated dibenzodioxins and dibenzofurans that may be present in F024, based on the results obtained from the EPA-sponsored incineration treatment test of F024 wastes containing these constituents. This regulatory approach should ensure that sufficient incineration capacity is available to treat F024 and that F024 is treated before land disposal to levels that adequately protect human health and the environment. This issue is discussed in more detail in the response to comment 45-Aib-1.

Comment Number: 45-Aia-05

Docket Number: LD12-00221

Commenter: The Vinyl Institute

Issue: F024

Subissue: Treatment standards for dioxins and furans

Comment:

On November 22, 1989 the proposed land disposal restrictions for Third Third scheduled wastes were published in the Federal Register. 54 Fed. Reg. 48372 (Nov. 22, 1989). Section III.A.6.b. of the supplementary information for the proposed regulations indicates that EPA has received information that disposal firms are refusing to accept F024 wastes and requests information concerning this matter. 54 Fed. Reg. at 48450. The Vinyl Institute wishes to confirm that since June 8, 1989, at least three member companies have been unable to locate disposal firms willing to take their F024 waste. Prior to the effective date of the Second Third restrictions, these companies had their F024 waste incinerated by disposal firms, but now, these disposal firms refuse to take the F024 waste. Presumably, this is because the F024 treatment standards require testing of incinerator ash for chlorinated dibenzo dioxins and furans.

The present situation has forced some Vinyl Institute member companies to containerize and store their F024 waste onsite. As these companies are not permitted to store this waste in containers for more than 90 days, exemptions must be requested on a regular basis from EPA or state agencies authorized to implement the Resource Conservation and Recovery Act. Clearly, these stopgap measures to handle F024 waste cannot continue. EPA is obligated to ensure that alternative waste disposal techniques and facilities exist before banning the land disposal of specific wastes such as F024.

Comment Number: 45-Aia-4

Docket Number: LD12-00179

Commenter: The Dow Chemical Company

Issue: F024

Subissue: Treatment standards for dioxins and furans

Response:

(Continued)

The Agency may elect not to regulate every BDAT List constituent that is present or suspected to be present in a waste. Frequently, EPA selects an appropriate subset of constituents for regulation in order to facilitate compliance and enforcement. This subset of constituents is selected to ensure that other constituents of concern are adequately treated when the treatment standards for the regulated constituents are met. The Agency does not believe that the surrogates suggested for the chlorinated dibenzodioxins and dibenzofurans by the commenter were appropriate because they were not more difficult to treat than the chlorinated dibenzodioxin and dibenzofuran constituents and therefore would not ensure adequate treatment of these constituents. The Agency also attempted to identify surrogates, but was unable to identify an appropriate surrogate that was present at treatable levels in all of the wastes containing the chlorinated dibenzodioxin and dibenzofuran constituents. However, as mentioned previously, the Agency is deleting these constituents from regulation and is requiring that the previously-promulgated concentration-based treatment standards for organic constituents be achieved using incineration technologies. In this manner, the Agency believes that treatment firms' concerns with accepting F024 will be allayed while any of the chlorinated dibenzodioxins and dibenzofurans that may be present in the waste will be effectively destroyed.

Comment Number: 45-Aia-4
Docket Number: LD12-00179
Commenter: The Dow Chemical Company
Issue: F024
Subissue: Treatment standards for dioxins and furans
Response:

Since promulgation of the Second Third Rule, it has come to the Agency's attention that treatment firms are refusing to accept F024 largely due to the analytical costs to determine compliance with the concentration-based treatment standards for chlorinated dibenzodioxins and dibenzofurans and the perceived stigma of managing wastes containing these constituents. In response, the Agency is deleting the chlorinated dibenzodioxins and dibenzofurans as regulated constituents and is revising the concentration-based treatment standards promulgated for the volatile and semivolatile organic constituents in F024 in the Second Third Rule (54 FR 26594, 26615) to require that these concentration-based treatment standards be achieved using incineration technologies. As such, treaters of F024 will not be required to analyze either the untreated F024 or the treated residuals for the chlorinated dibenzodioxin and dibenzofuran constituents. The Agency believes these revisions will allay the treatment firms' concerns with accepting F024. Additionally, the revised standards will reduce the analytical costs associated with compliance with this rule.

As discussed in the Final BDAT Background Document for F024, incineration is the BDAT technology for organic constituents in nonwastewater and wastewater forms of F024. EPA is specifying that the concentration-based treatment standards for F024 must be met via incineration because the Agency believes that incineration technologies will effectively destroy any of the chlorinated dibenzodioxins and dibenzofurans that may be present in F024, based on the results obtained from the EPA-sponsored incineration treatment test of F024 wastes containing these constituents. This regulatory approach should ensure that sufficient incineration capacity is available to treat F024 and that F024 is treated before land disposal to levels that adequately protect human health and the environment. This issue is discussed in more detail in the response to comment 45-Aib-1.

Comment Number: 45-Aia-~~5~~4

Docket Number: LD12-00179

Commenter: The Dow Chemical Company

Issue: F024

Subissue: Treatment standards for dioxins and furans

Comment:

Dow supports the Agency's proposal to amend treatment standards for chlorinated-dibenzo dioxins and furans in F024 wastewaters and non-wastewaters. Eliminating the treatment standards for these compounds, or at least raising them, would provide much needed relief to the chemical industry, since commercial TSD facilities will not currently treat these wastes. Dow has approached four TSD facilities for treatment of an F024 waste contaminated with PCBs which cannot be handled in our on-site RCRA-permitted incinerator. None of the four would accept the F024 wastes because of the analytical difficulties in determining whether the residues meet the treatment standards for the chlorinated-dibenzo dioxins and furans. Consequently, our F024 wastes which cannot be treated onsite must be stored.

Achieving treatment standards for the other chlorinated constituents in the F024 waste would be sufficiently protective of human health and the environment without the additional burden of having to test the residues for compliance with treatment standards for chlorinated dibenzo-dioxins and furans. In addition, subsequent placement of the residues from the treatment of these wastes in hazardous waste units adds further assurance that these wastes are handled in a manner which is protective of human health and the environment.

Comment Number: 45-Aia-3
Docket Number: LD12-00133
Commenter: PPG Industries, Inc.
Issue: F024
Subissue: Treatment standards for dioxins and furans
Response:

(Continued)

The Agency may elect not to regulate every BDAT List constituent that is present or suspected to be present in a waste. Frequently, EPA selects an appropriate subset of constituents for regulation in order to facilitate compliance and enforcement. This subset of constituents is selected to ensure that other constituents of concern are adequately treated when the treatment standards for the regulated constituents are met. The Agency does not believe that the surrogates suggested for the chlorinated dibenzodioxins and dibenzofurans by the commenter were appropriate because they were not more difficult to treat than the chlorinated dibenzodioxin and dibenzofuran constituents and therefore would not ensure adequate treatment of these constituents. The Agency also attempted to identify surrogates, but was unable to identify an appropriate surrogate that was present at treatable levels in all of the wastes containing the chlorinated dibenzodioxin and dibenzofuran constituents. However, as mentioned previously, the Agency is deleting these constituents from regulation and is requiring that the previously-promulgated concentration-based treatment standards for organic constituents be achieved using incineration technologies. In this manner, the Agency believes that treatment firms' concerns with accepting F024 will be allayed while any of the chlorinated dibenzodioxins and dibenzofurans that may be present in the waste will be effectively destroyed.

Comment Number: 45-Aia-3
Docket Number: LD12-00133
Commenter: PPG Industries, Inc.
Issue: F024
Subissue: Treatment standards for dioxins and furans
Response:

Since promulgation of the Second Third Rule, it has come to the Agency's attention that treatment firms are refusing to accept F024 largely due to the analytical costs to determine compliance with the concentration-based treatment standards for chlorinated dibenzodioxins and dibenzofurans and the perceived stigma of managing wastes containing these constituents. In response, the Agency is deleting the chlorinated dibenzodioxins and dibenzofurans as regulated constituents and is revising the concentration-based treatment standards promulgated for the volatile and semivolatile organic constituents in F024 in the Second Third Rule (54 FR 26594, 26615) to require that these concentration-based treatment standards be achieved using incineration technologies. As such, treaters of F024 will not be required to analyze either the untreated F024 or the treated residuals for the chlorinated dibenzodioxin and dibenzofuran constituents. The Agency believes these revisions will allay the treatment firms' concerns with accepting F024. Additionally, the revised standards will reduce the analytical costs associated with compliance with this rule.

As discussed in the Final BDAT Background Document for F024, incineration is the BDAT technology for organic constituents in nonwastewater and wastewater forms of F024. EPA is specifying that the concentration-based treatment standards for F024 must be met via incineration because the Agency believes that incineration technologies will effectively destroy any of the chlorinated dibenzodioxins and dibenzofurans that may be present in F024, based on the results obtained from the EPA-sponsored incineration treatment test of F024 wastes containing these constituents. This regulatory approach should ensure that sufficient incineration capacity is available to treat F024 and that F024 is treated before land disposal to levels that adequately protect human health and the environment. This issue is discussed in more detail in the response to comment 45-Aib-1.

LD12-CC133.D 5/5

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FAX 312/841-2824

August 29, 1989

PPG Industries, Inc.
P.O.Box 1000
Columbia Southern Road
Lake Charles, LA 70602

Dear Mr. Cooper;

CWM Technical Center would like to take this opportunity to thank you for submitting your waste material for incineration prequalification.

The following samples have been received and reviewed for qualification.

Profile#	Waste Name
J48130	Incinerator Feed
J48131	Sludge Kettle Bottoms

The facilities are not able to accept F024 waste streams at this time and the samples are being returned to you.

If you have any questions, please feel free to contact me.

Sincerely,

John Nixon

cc: Bill Gamlin

JN/jl

ensco
environmental systems company

4/5

[illegible]
3112 Valley Creek Drive
Suite C
Baton Rouge, Louisiana 70808
(504) 927-9600
FAX No. 504-923-3967

WASTE TREATMENT DIVISION

June 8, 1989

Mr. Arlen Greathouse
PPG Industries, Inc.
Post Office Box 1000
Lake Charles, Louisiana 70602

Dear Mr. Greathouse:

Following evaluation of Waste Material Data Sheet (WMDS) Numbers 7671 (Sludge Kettle Bottoms), ENSCO regrets to inform you that we must reject the material due to its F024 characteristics in regard to our landfill permit, and 85511 (Sanitary Sewer Sludge) due to the fact we are not permitted to handle biological waste.

Also enclosed are laboratory analysis results from WMDS #7671. Should you have any questions, do not hesitate to call me at (504) 927-9600.

Thank you for your interest in ENSCO.

Sincerely,

ENSCO, INC.

Jean Decker

Jean Decker
Customer Sales Representative

JD/gd

cc: Bob Koprowski
Technical Sales Rep.

File: 507.2.05D

cont.

3/5

For incineration, eight firms who reported in the 1986 Screener Survey that they incinerate PCBs were contacted. In addition, the one company that reported that they burn PCBs in a boiler was also contacted. Also, two firms tentatively identified as having alternative thermal technologies (similar to incineration) were also contacted. All eleven of these firms are listed on Table 1.

For chemical dechlorination of PCBs, there are at least two significant technologies and several variations practiced. Eighteen companies that reported practicing one of these technologies commercially were contacted. Apparently only 10 of these actually dechlorinate PCBs (these are listed in Table 3).

Only one commercial PCB biological degradation firm was reported. They were also contacted.

Overview

There are three incinerators found to be currently permitted under TSCA and RCRA to handle both PCBs and RCRA hazardous wastes:[2] (1) ENSCO, (2) Rollins, and (3) SCA (see Table 2)). These currently handle a total of about 126,000 tons/year of total regulated materials (not including the SCA facility), of which about 24,500 tons is PCBs

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[2] SCA's Chicago facility is included as one of the three RCRA TSCA facilities, although they would not respond to any inquiries by telephone. Consequently, all subsequent incineration figures do not include SCA's Chicago operation.

cont.

LU12-00133.B
2/5

DRAFT FINAL REPORT

Summary of Commercial Hazardous Waste Treatment/Destruction Capacity for Mixed RCRA/PCB Wastes

Submitted to:

Jo-Ann Bassi
Waste Treatment Branch
Office of Solid Waste
U.S. Environmental Protection Agency
401 M St., S.W.
Washington, D.C. 20460

In Response to:

USEPA Contract No. 68-01-7053
Work Assignment 86

June 1987

cont.

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Comment Number: 45-Air-3

Docket Number: LD12-00133

Commenter: PPG Industries, Inc.

Issue: F024

Subissue: Treatment standards for dioxins and furans

Comment:

2. FO24: In the preamble to the proposed rule, EPA describes "anecdotal information" indicating that commercial facilities have not been accepting FO24 wastes because the treatment standard includes standards for chlorinated-dibenzo dioxins and furans. (See 54 Fed. Reg. at 48450 and 48482.) PPG has experienced this problem first hand. PPG has adequate on-site capacity for most of the FO24 waste that it generates. However, it does not have any current on-site capacity to handle one FO24 waste stream that consists of solids and contains inadvertently generated PCB's in concentrations greater than 50 ppm.

There are a limited number of commercial incinerators in the United States with the necessary approvals under RCRA and TSCA to accept PPG's FO24/PCB solids for treatment. This is documented in EPA's June, 1987, Draft Final Report entitled, "Summary of Commercial Hazardous Waste Treatment/Destruction Capacity for Mixed RCRA/PCB Wastes." (Excerpts attached.) PPG is familiar with only three incineration facilities identified as having existing capacity to treat RCRA/PCB Wastes: 1) ENSCO, Eldorado, Arkansas; 2) Rollins, Deer Park, Texas; and, 3) SCA (CWM Chemical Services, Inc.) Chicago, Illinois

Since shortly before issuance of the final Second Third Land Disposal Restrictions rule in June, 1989, none of these facilities has been willing to accept FO24/PCB solids. The attached letters dated June 8, 1989, August 29, 1989, document rejections from ENSCO and CWM Chemical Services. Rollins orally indicated, in early September, that it is unwilling to accept the waste. The waste contractors have informally indicated that the dioxin standard is the cause of their reluctance to manage this waste.

PPG is preparing to submit a request for a case-by-case extension to provide relief while we develop on-site capacity for this waste. However, based on our discussions with commercial incinerators, if the dioxin standard were eliminated, capacity would be available.

PPG urges EPA to eliminate the dioxin/furan standard from FO24 on the basis that the other chlorinated organic compounds in the standard are adequate surrogates.

cont.

Comment Number: 45-Aia-2

Docket Number: LD12-00124

Commenter: Rollins Environmental Services (DE) Inc.

Issue: F024

Subissue: Treatment standards for dioxins and furans

Response:

(Continued)

The Agency may elect not to regulate every BDAT List constituent that is present or suspected to be present in a waste. Frequently, EPA selects an appropriate subset of constituents for regulation in order to facilitate compliance and enforcement. This subset of constituents is selected to ensure that other constituents of concern are adequately treated when the treatment standards for the regulated constituents are met. The Agency does not believe that the surrogates suggested for the chlorinated dibenzodioxins and dibenzofurans by the commenter were appropriate because they were not more difficult to treat than the chlorinated dibenzodioxin and dibenzofuran constituents and therefore would not ensure adequate treatment of these constituents. The Agency also attempted to identify surrogates, but was unable to identify an appropriate surrogate that was present at treatable levels in all of the wastes containing the chlorinated dibenzodioxin and dibenzofuran constituents. However, as mentioned previously, the Agency is deleting these constituents from regulation and is requiring that the previously-promulgated concentration-based treatment standards for organic constituents be achieved using incineration technologies. In this manner, the Agency believes that treatment firms' concerns with accepting F024 will be allayed while any of the chlorinated dibenzodioxins and dibenzofurans that may be present in the waste will be effectively destroyed.

Comment Number: 45-Aia-2

Docket Number: LD12-00124

Commenter: Rollins Environmental Services (DE) Inc.

Issue: F024

Subissue: Treatment standards for dioxins and furans

Response:

Since promulgation of the Second Third Rule, it has come to the Agency's attention that treatment firms are refusing to accept F024 largely due to the analytical costs to determine compliance with the concentration-based treatment standards for chlorinated dibenzodioxins and dibenzofurans and the perceived stigma of managing wastes containing these constituents. In response, the Agency is deleting the chlorinated dibenzodioxins and dibenzofurans as regulated constituents and is revising the concentration-based treatment standards promulgated for the volatile and semivolatile organic constituents in F024 in the Second Third Rule (54 FR 26594, 26615) to require that these concentration-based treatment standards be achieved using incineration technologies. As such, treaters of F024 will not be required to analyze either the untreated F024 or the treated residuals for the chlorinated dibenzodioxin and dibenzofuran constituents. The Agency believes these revisions will allay the treatment firms' concerns with accepting F024. Additionally, the revised standards will reduce the analytical costs associated with compliance with this rule.

As discussed in the Final BDAT Background Document for F024, incineration is the BDAT technology for organic constituents in nonwastewater and wastewater forms of F024. EPA is specifying that the concentration-based treatment standards for F024 must be met via incineration because the Agency believes that incineration technologies will effectively destroy any of the chlorinated dibenzodioxins and dibenzofurans that may be present in F024, based on the results obtained from the EPA-sponsored incineration treatment test of F024 wastes containing these constituents. This regulatory approach should ensure that sufficient incineration capacity is available to treat F024 and that F024 is treated before land disposal to levels that adequately protect human health and the environment. This issue is discussed in more detail in the response to comment 45-Aib-1.

Comment Number: 45-Aia-2

Docket Number: LD12-00124

Commenter: Rollins Environmental Services (DE) Inc.

Issue: F024

Subissue: Treatment standards for dioxins and furans

Comment:

EPA notes that it has received anecdotal information that some incineration firms are refusing to treat F024 wastes because the treatment standards include standards for various dioxins and furans (Preamble p. 48450).

RES has not accepted F024, and we understand that no other commercial hazardous waste incineration company has accepted F024, since the standards were specified, for the very reason indicated by the EPA comment.

Further, we believe that if the other organic standards for F024 are met, the residue can be expected to also meet the current treatment standards for dioxins and furans. Accordingly, requiring expensive analysis for dioxins and furans is unnecessary, and the treatment standards for dioxins and furans can be deleted.

Comment Number: 45-Aia-1
Docket Number: LD12-00075
Commenter: Georgia Gulf Corporation
Issue: F024
Subissue: Treatment standards for dioxins and furans
Response:

Since promulgation of the Second Third Rule, it has come to the Agency's attention that treatment firms are refusing to accept F024 largely due to the analytical costs to determine compliance with the concentration-based treatment standards for chlorinated dibenzodioxins and dibenzofurans and the perceived stigma of managing wastes containing these constituents. In response, the Agency is deleting the chlorinated dibenzodioxins and dibenzofurans as regulated constituents and is revising the concentration-based treatment standards promulgated for the volatile and semivolatile organic constituents in F024 in the Second Third Rule (54 FR 26594, 26615) to require that these concentration-based treatment standards be achieved using incineration technologies. As such, treaters of F024 will not be required to analyze either the untreated F024 or the treated residuals for the chlorinated dibenzodioxin and dibenzofuran constituents. The Agency believes these revisions will allay the treatment firms' concerns with accepting F024. Additionally, the revised standards will reduce the analytical costs associated with compliance with this rule.

As discussed in the Final BDAT Background Document for F024, incineration is the BDAT technology for organic constituents in nonwastewater and wastewater forms of F024. EPA is specifying that the concentration-based treatment standards for F024 must be met via incineration because the Agency believes that incineration technologies will effectively destroy any of the chlorinated dibenzodioxins and dibenzofurans that may be present in F024, based on the results obtained from the EPA-sponsored incineration treatment test of F024 wastes containing these constituents. This regulatory approach should ensure that sufficient incineration capacity is available to treat F024 and that F024 is treated before land disposal to levels that adequately protect human health and the environment. This issue is discussed in more detail in the response to comment 45-Aib-1.

Comment Number: 45-Ai-1

Docket Number: LD12-00075

Commenter: Georgia Gulf Corporation

Issue: F024

Subissue: Treatment standards for dioxins and furans

Comment:

On November 22, 1989 the proposed land disposal restrictions for third scheduled wastes was published in the Federal Register. Section III.A.7.b of the supplementary information for the proposed regulations indicates that the EPA has received information that disposal firms are refusing to accept F024 wastes and requests information concerning this matter. Georgia Gulf wishes to inform the EPA that since June 8, 1989 we have been unable to locate any disposal firm permitted for both the incineration of hazardous waste and polychlorinated biphenyls willing to accept our waste for disposal

Prior to the effective date of the second third restrictions this waste was incinerated by ENSCO, Inc. in El Dorado, Arkansas. Since that date they have refused to accept further shipments and have expressed no interest in accepting the waste in the future. We have also contacted Rollins Environmental Services in Deer Park, Texas and Chemical Waste Management's facility in Chicago, Illinois. All firms have expressed deep concern for meeting the treatment standard of 0.001 mg/kg for the listed dibenzodioxins and dibenzofurans and have refused to accept the waste for disposal. APTUS Environmental Services of Coffeyville, Kansas has also been contacted. APTUS is presently seeking to obtain a hazardous waste permit and has expressed a mild interest in using a portion of our F024 waste for a planned trial burn, however, they cannot accept all of the waste. The trial burn date has not been set and could be as much as 6 months away.

This situation has forced Georgia Gulf to containerize and store approximately 145,000 pounds of F024 onsite. As Georgia Gulf is not permitted to store this waste in containers for more than 90 days storage exemptions must be requested on a regular basis from the Louisiana Department of Environmental Quality. Based upon our experience with the contacted disposal firms relief from this situation is not foreseeable for at least 6 months.

ISSUE CODE 45: F024 - Production of Chlorinated Aliphatic Hydrocarbons

A. Treatment Standard
    i Dioxins and Furans
        a. Treatment Firms Refusal to Accept F024
        b. Surrogate Constituents for Dioxins and Furans
    ii Metals
    iii Organics
B. BDAT for Nonwastewater Organics
C. Listing Definitions for F024
    i Wastewaters
    ii Revised Listing Definitions

Comment Number: 44-Avi-1

Docket Number: LD12 - 00159

Commenter: Waste Management, Inc. and Chemical Waste Management, Inc.

Issue: Oxygenated Hydrocarbons and Heterocyclic U and P Wastes

Subissue: Oxygenateds

Response:

The commenter opposes setting fuel substitution as a BDAT treatment standard option for those oxygenated hydrocarbon and heterocyclic U and P wastes that are having methods of treatment promulgated as BDAT treatment standards.

EPA believes that many organic U and P wastes in the "not amenable to quantification" category, such as oxygenated hydrocarbon and heterocyclic wastes, have significant energy recovery value and are thus appropriate for fuel substitution. In the Second Thirds Rulemaking, fuel substitution, along with incineration, was promulgated as the BDAT treatment standard (method of treatment) for K027, K111-K116, U221, and U223. These K and U wastes contain dinitrotoluene, toluenediamine, toluene diisocyanate, and other waste constituents that tend to polymerize, as discussed in the BDAT background document for these wastes (Final Best Demonstrated Available Technology (BDAT) Background Document for Wastes From the Production of Dinitrotoluene, Toluenediamine, and Toluene Diisocyanate. May, 1989). The Agency believes that these wastes are similar in chemical structure, yet more difficult to treat, than these oxygenated U and P wastes; therefore, if fuel substitution is demonstrated for K027, K111-K116, U221, and U223, then it is demonstrated for these oxygenated hydrocarbon and heterocyclic wastes.

In addition, for promulgation, the Agency has expanded the BDAT methods of treatment to include fuel substitution for wastes not amenable to quantification which contain only carbon, hydrogen, and/or oxygen in their molecular structure. This expands the list of wastes (as proposed) that could be treated by fuel substitution from just oxygenated wastes to aromatics and other hydrocarbon wastes, polynuclear aromatic wastes, pharmaceutical wastes, and phenolic wastes that contain only carbon, hydrogen, and/or oxygen. Unquantifiable U and P wastes that contain halogens, sulfur, or nitrogen will only have incineration as the treatment standard (not fuel substitution) to remove the potential for unregulated SOx, NOx, or halogen acids emissions from boilers or other thermal combustion facilities that are not yet regulated as treatment units under 40 CFR 264. EPA believes that U and P wastes containing only carbon, hydrogen, and/or oxygen, and not containing halogens, sulfur, or nitrogen, can be treated by fuel substitution as well as by incineration. The aromatic and aliphatic (both saturated and unsaturated) components of these wastes are typically used as fuel because of their high heating value. In addition, the oxygenated and phenolic components are already oxidized.

Comment Number: 44-Avi-1

Docket Number: LD12-00157

Commenter: WASTE MANAGEMENT, INC. and CHEMICAL WASTE MANAGEMENT, INC.

Issue: Oxygenated Hydrocarbon and Heterocyclic U and P Wastes

Subissue: Oxygenateds

Comment:

B. Oxygenated Hydrocarbon and Heterocyclic Wastes (54 Fed. Reg. at 48,407)

EPA proposed incineration as the method of treatment for a host of nonhalogenated organics, but also includes fuels substitution as the method for seventeen oxygenated hydrocarbon and heterocyclic wastes. Id. at 48,407. As we pointed out in comments on the First and Second-Third proposals (which we incorporate by reference), and as we have argued to the D.C. Circuit, boilers and industrial furnaces can hardly be deemed a "Best Demonstrated Available Technology" on par with incineration, absent an equivalency demonstration. We nonetheless applaud the Agency's statement that "all facilities incinerating those wastes must comply with 40 C.F.R. 264 Subpart O or 265 Subpart O." Id. It appears boilers and industrial furnaces would then in fact require permits under Subpart O in order to burn those seventeen wastes at least until EPA finalizes its BIF rulemaking.

Comment Number: 44-Av-1

Docket Number: LD12 - 00179

Commenter: **The Dow Chemical Company**

Issue: **Oxygenated Hydrocarbons and Heterocyclic U and P Wastes**

Subissue: **Oxygenateds**

Response:

The commenter supplies data demonstrating that the proposed BDAT treatment standard for U002 (acetone) nonwastewaters is too low. The commenter, based on their ash data, suggests a BDAT treatment standard of 24 ppm is more appropriate.

The Agency agrees with the commenter and, although the commenter's data was not used, is promulgating a higher BDAT treatment standard for U002 nonwastewaters.

This revision is the result of a modification in the BDAT incineration test data base. After reviewing treatment performance data from the 14 incineration tests, the Agency determined that the data from Tests 3, 5, and 6 were not suitable for use in developing treatment standards for organic U and P and multi-source leachate (F039) nonwastewaters. Data from Test 3 were not considered because the detection limits were clearly above the average detection limits for the other incineration tests. In addition, the wastes treated in Test 3 did not contain significant concentrations of the constituents of concern. Data from Tests 5 and 6 were not considered because the wastes treated were K024 (a phthalic anhydride waste) and K037 (a disulfoton waste). These wastes represent unique matrices that the Agency does not believe are representative of U and P or multi-source leachate (F039) waste matrices. Therefore, data from Tests 3, 5, and 6 were not considered further in developing treatment standards.

Acetone was detected in the untreated waste feed in Tests 3, 9, 11, and 13, with the highest acetone ash detection limit occurring in Test 3. Therefore, the proposed BDAT treatment standard of 0.14 ppm for U002 nonwastewaters was based on the Test 3 acetone ash detection limit of 0.05 ppm. Since Test 3 data is no longer being used by the Agency, this proposed BDAT treatment standard is being revised. The next highest acetone ash detection limit was 0.01 ppm, which the Agency believes is too low to be routinely achievable in ash by analytical laboratories. Therefore, the highest detection limit for acetone from all 11 incineration tests was used to calculate the BDAT treatment standard for U002 nonwastewaters.

The promulgated BDAT treatment standard for U002 nonwastewaters is 160 ppm, based on an acetone ash detection limit of 50 ppm from Test 2. Since this is higher than the commenter's acetone ash detection limit, the commenter should have no problem meeting this standard.

Information supporting the development of this standard is in Volume C of the U & P Wastes and Multi-Source Leachate (F039) background document.

Comment Number: 44 - Av - 1

Docket Number: LD12 - 00179

Commenter: THE DOW CHEMICAL COMPANY

Issue: Oxygenated Hydrocarbons and Heterocyclic U and P Wastes

Subissue: Oxygenateds

Comment:

-- page 48,414 (C1) U002 (Acetone)

Dow-generated data on acetone levels in ash from its BDAT RCRA-permitted incinerator demonstrates that the proposed acetone standard for nonwastewaters is excessively low. Utilizing EPA's "Methodology for Developing Best Demonstrated Available (BDAT) Treatment Standards," Office of Solid Waste (December, 1988). Dow's acetone data results in a treatment standard of 24 ppm. EPA is encouraged to establish a higher acetone standard.

just the BDAT technology), including caustic treatment, to treat waste to the BDAT treatment standard.

Unfortunately, the Agency did not receive sufficient data to support the establishment of concentration-based BDAT treatment standards for P003 nonwastewaters. This commenter's information may indicate that caustic treatment is an "applicable" technology for treatment of P003 nonwastewaters, but, since the technology is still in the research and development stage and not employed in full-scale operation, it is not "demonstrated" for purposes of the BDAT methodology. Once in operation, caustic treatment may still fall short of being "best". Additionally, even if the commenter's caustic treatment method provided the "best" treatment, if the method were to remain a proprietary process, then it could not be considered "available". As a result, caustic treatment is not considered BDAT for P003 nonwastewaters.

Finally, even though an SW-846 analytical method exists for acrolein, the Agency is specifying a method of treatment as the BDAT treatment standard for P003 nonwastewaters as opposed to a concentration-based treatment standard, because of unacceptable variations in acrolein ash detection limits obtained by EPA during the 14 BDAT incineration tests.

Comment Number: 44-Aiv-1

Docket Number: LD12 - 00190

Commenter: Union Carbide Chemicals and Plastics Company, Inc.

Issue: Oxygenated Hydrocarbons and Heterocyclic U and P Wastes

Subissue: Oxygenateds

Response:

The commenter recommends adding caustic treatment as an alternate BDAT treatment standard for P003 (acrolein) nonwastewater streams, in addition to incineration and fuel substitution.

EPA develops BDAT treatment standards based on technologies that are proven to be effective in treating the waste(s) of interest. BDAT is determined for a particular waste by applying the following methodology:

(1) The Agency first determines which technologies are potentially applicable for treatment of the waste(s) of interest. To be applicable, a technology must theoretically be usable to treat the waste(s) in question or a waste that is similar in terms of parameters that affect treatment selection.

(2) The Agency then determines which of the applicable technologies are demonstrated for treatment of the waste(s) of interest. To be demonstrated, a technology must be employed in full-scale operation for treatment of the waste in question or a similar waste. Technologies available only at pilot- or bench-scale operations are not considered in identifying demonstrated technologies.

(3) The next step is to determine which of the demonstrated technologies is "best" for the purposes of establishing BDAT. Best demonstrated technology is determined based on a thorough review of all the treatment performance data available on the waste of concern or wastes judged to be similar.

(4) Finally, the Agency determines whether the best demonstrated technology is "available" for treatment of the waste(s) of interest. An available treatment technology is one that (a) is not a proprietary or patented process that cannot be purchased or licensed from the proprietor (ie. it must be commercially available), and (b) substantially diminishes the toxicity of the waste or substantially reduces the likelihood of migration of hazardous constituents from the waste.

During the development of the proposed rule, the Agency did not identify caustic treatment as an applicable treatment technology for the treatment of P003 nonwastewaters. EPA solicited comments requesting analytical data from the treatment of P003 (conforming with the data collection and analysis quality control requirements listed in the EPA Generic Quality Assurance Project Plan for Land Disposal Restrictions Program ("BDAT")) on which to base concentration-based treatment standards. Had the Agency received such data, concentration-based BDAT treatment standards for P003 nonwastewaters may have been established, and then industry could use any treatment technology (not

Comment Number: 44-Aiv-1

Docket Number: LD12-00190

Commenter: UNION CARBIDE CHEMICALS AND PLASTICS COMPANY, INC.

Issue: Oxygenated Hydrocarbons and Heterocyclic U and P Wastes

Subissue: Oxygenateds

Comment:

17) P003-Acrolein - UCC supports the treatment standard of incineration or fuel substitution for nonwastewater acrolein streams. In addition to this treatment standard, UCC encourages the Agency to include caustic treatment as an alternate treatment standard. At one UCC location a caustic waste treatment reactor will be installed to treat a waste stream that contains approximately 1 percent acrolein, 2.5 percent TOC and several hundred ppm TSS. The reactor, based on R&D results, will reduce the acrolein to a level of approximately 5 ppm. EPA should include this proven caustic treatment technology as a treatment standard for acrolein.

Comment Number: 44-Aiii-2

Docket Number: LD12 - 00024

Commenter: Dow Chemical USA

Issue: Oxygenated Hydrocarbons and Heterocyclic U and P Wastes

Subissue: Oxygenateds

Response:

The commenter is providing EPA with data characterizing biological treatment of U154 (methanol) wastewaters, which EPA may use to calculate concentration-based BDAT treatment standards.

The Agency agrees with the commenter that a concentration-based BDAT treatment standard should be promulgated for U154 wastewaters, and will use leachate treatment performance data to calculate the standard. Based on this data, EPA is setting a concentration-based BDAT treatment standard using biological treatment technology and an achievable effluent of 2 ppm (based on the detection limit). The resulting BDAT treatment standard for U154 wastewaters is 5.6 ppm (5.6 mg/L). See Volume A of the U & P Wastes and Multi-Source Leachate (F039) background document for more information on the development of this treatment standard.

Comment Number: 44-Aiii-2
Docket Number: LD12-00024
Commenter: Dow Chemical USA
Issue: Oxygenated Hydrocarbon and Heterocyclic U and P Wastes
Subissue: Oxygenateds
Comment:

SUBJECT: DATA SUBMITTAL UNDER THE 3RD 3RD LAND DISPOSAL RESTRICTIONS (LDR) PROPOSAL

Enclosed please find a data summary of methanol analysis by the Dow Chemical Company at its Midland manufacturing facility. The data is presented to facilitate development of concentration based LDR treatment standards for U154, as appropriate. Due to the site specific nature of the operations at Midland, the data may not be appropriate for developing U154 treatment standards. However, in light of the absence of methanol data at the time of promulgation of the proposed 3rd 3rd, Dow wishes to make it available in the event that EPA does determine it is useful.

As a result of waste code carry through, the influent to the Dow facility is characterized as U154 as well as numerous other RCRA codes. The unit treating this waste is an aggressive biological treatment plant utilizing extended aeration. A complete discussion of the treatment operations, as well as the laboratory analysis reports, which the attached summary data was extracted from, is on file with the data Dow has submitted under the leachate treatability study.

METHANOL DATA SUMMARY
WASTEWATER DATA ONLY
ALL CONCENTRATIONS IN PPB

INFLUENT CONCENTRATIONS

SAMPLE DATE	7/20/89	7/20/89	8/10/89	8/10/89	8/15/89	AVERAGE
CONCENTRATIONS	46000	46000	51000	56000	47000	48833

EFFLUENT CONCENTRATIONS

SAMPLE DATE	7/21/89	7/21/89	8/11/89	8/11/89	8/16/89	AVERAGE
CONCENTRATIONS	750 U	750 U	750 U	750 U	750 U	750 U

AVERAGE REMOVAL > 98.5%

Comment Number: 44-Aiii-1

Docket Number: LD12 - 00144

Commenter: American Cyanamid Company

Issue: Oxygenated Hydrocarbons and Heterocyclic U and P Wastes

Subissue: Oxygenateds

Response:

The commenter questions EPA's rationale in setting methods of treatment as BDAT treatment standards for U154 (methanol) nonwastewaters and wastewaters, when concentration-based BDAT treatment standards were previously set for nonwastewaters and wastewaters containing the spent solvent methanol.

The Agency agrees with the commenter that a concentration-based BDAT treatment standard should be promulgated for U154 wastewaters. Based on industry-submitted leachate treatment performance data, EPA has established biological treatment as BDAT for U154 wastewaters and is setting a concentration-based BDAT treatment standard based on an achievable effluent from biological treatment of 2 ppm (based on the detection limit). The resulting BDAT treatment standard for U154 wastewaters is 5.6 ppm (5.6 mg/L). See Volume A of the U & P Wastes and Multi-Source Leachate (F039) background document for more information on the development of this treatment standard.

EPA is not able to promulgate a concentration-based treatment standard for U154 nonwastewaters. In general, in order to establish concentration-based BDAT treatment standards for U and P wastes a more rigorous analysis of quantification methods and potential analytical problems must occur. This is because U and P waste matrices are likely to be more complex and variable than F and K waste matrices (such as spent solvents). Calculating concentration-based standards for U154 nonwastewaters was not possible since methanol in nonwastewater matrices is difficult to quantify consistently with the GC/MS methods specified by SW-846. As a result, the treatment methods of incineration or fuel substitution (facility's choice) methods are being promulgated as the BDAT treatment standard for U154 nonwastewaters.

Comment Number: 44-Aiii-1 (Continued)
Docket Number: LD12-00144
Commenter: AMERICAN CYANAMID COMPANY
Issue: Oxygenated Hydrocarbons and Heterocyclic U and P Wastes
Subissue: Oxygenateds
Comment:

C. Proposed Treatment Standards for Methanol (U154)

The Agency previously established a treatment standard expressed as concentration in a waste extract of 0.25 mg/l for wastewaters containing the spent solvent methanol and 0.75 mg/l for all other spent solvent wastes containing methanol. Based on these previously established standards, we do not understand why the Agency has now established incineration or fuel substitution for U154 non-wastewaters and wet air oxidation or chemical oxidation followed by carbon adsorption, biodegradation followed by carbon adsorption, or incineration as methods for treatment for U154 wastewaters. We request the Agency to provide justification for their establishment of BDAT treatment standards to replace the already established concentration based standards.

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Comment Number: 44-Aiii-1

Docket Number: LD12-00144

Commenter: AMERICAN CYANAMID COMPANY

Issue: Oxygenated Hydrocarbons and Heterocyclic U and P Wastes

Subissue: Oxygenateds

Comment:

B. Proposed Treatment Standards for Oxygenated Hydrocarbons and Heterocyclics - U154 Methanol. 54 FR 48413-48414.

EPA has proposed incineration or fuel substitution as methods of treatment for U154 nonwastewaters and wet air oxidation or chemical oxidation followed by carbon adsorption, biodegradation followed by carbon adsorption, or incineration as methods of treatment for U154 wastewaters.

We question EPA's rationale for proposing methods of treatment as BDAT for these particular wastes when EPA has already established treatment standards expressed as concentrations in waste extract of 0.25 mg/l for wastewaters containing the spent solvent methanol and 0.75 mg/l for all other spent solvent wastes containing methanol (40 CFR 268.41).

Cont.

Comment Number: 44-Aii-1

Docket Number: LD12 - 00116

Commenter: Monsanto Company

Issue: Oxygenated Hydrocarbons and Heterocyclic U and P Wastes

Subissue: Oxygenateds

Response:

The commenter urges EPA to promulgate a concentration-based BDAT treatment standard for U147 (maleic anhydride) wastewaters, instead of a method of treatment, based on a transfer of data approach analogous to that used in establishing the BDAT standards for U190 (phthalic anhydride) wastewaters (see 54 Federal Register 26620, June 23, 1989).

The Agency promulgated concentration-based treatment standards for U190 wastewaters based on the analytical method of hydrolyzing the phthalic anhydride to phthalic acid, as discussed in both the Second Third proposed and final rules. EPA had the data necessary to do this, because phthalic anhydride is a BDAT list constituent. Constituents on the BDAT list can be analyzed by an SW-846 analytical method, even if that analysis calls for the constituent to be hydrolyzed to another form.

U147, on the other hand, is not on the BDAT list of constituents and cannot be analyzed by any SW-846 method. As a result, EPA did not propose a BDAT treatment standard for "maleic anhydride (measured as maleic acid)", as it did for phthalic anhydride. Therefore, the methods of treatment proposed as the BDAT treatment standards for U147 wastewaters will be promulgated as proposed.

Additionally, as discussed in detail in Volume A of the U and P Wastes and Multi-Source Leachate (F039) background document, EPA has used extensive EPA/ITD data to establish concentration-based BDAT treatment standards for wastewater forms of U and P wastes and wastewater forms of multi-source leachate constituents.

Comment Number: 44-Aii-1

Docket Number: LD12-00116

Commenter: MONSANTO COMPANY

Issue: Oxygenated Hydrocarbon and Heterocyclic U and P Wastes

Subissue: Oxygenateds

Response:

More importantly, Monsanto (and the Agency) would prefer that BDAT for U147 wastewaters be established as a level rather than as a technology. We suggest that the Agency use an approach analogous to that used in establishing BDAT levels for U190 phthalic anhydride wastes. (See 54 FR 26620 June 23, 1989.) There, the Agency established the standard as "phthalic anhydride (measured as phthalic acid)." Like phthalic anhydride, maleic anhydride hydrolyzes in water to maleic acid which can be quantitated. We further propose that the Office of Solid Waste access and use any available wastewater treatment data that may be available through the Industrial Technology Division of the Water Office of EPA to establish BDAT.

Comment Number: 44-Ai-1

Docket Number: LD12 - 00116

Commenter: Monsanto Company

Issue: Oxygenated Hydrocarbons and Heterocyclic U and P Wastes

Subissue: Oxygenateds

Response:

The commenter disputes the effectiveness of carbon adsorption as a BDAT treatment requirement, in series with wet air or chemical oxidation or biodegradation, for U147 (maleic anhydride) wastewaters. The commenter points out that polar organic compounds such as maleic acid (a hydrolysis derivative of U147) exhibit very poor adsorption on carbon.

The methods of treatment promulgated as the BDAT treatment standard for U147 wastewaters are incineration, wet air oxidation followed by carbon adsorption, or chemical oxidation followed by carbon adsorption. Each facility generating U147 wastewater has the option of using any of these three treatment trains. Biological treatment (with or without carbon adsorption) is not being promulgated as a BDAT treatment standard for U147 wastewaters.

Next, carbon adsorption has been promulgated as an integral part of the wet air or chemical oxidation treatment train to provide secondary treatment, removing untreated maleic anhydride as well as partial oxidation products (ie. organic derivatives of U147 resulting from oxidation). The Agency believes that wet air oxidation or chemical oxidation will provide treatment of U147; however, to ensure effective treatment of any untreated maleic anhydride and other organic constituents in this waste, treatment should include a final carbon adsorption step. Since U147 is unquantifiable, making it impossible to accurately judge the effectiveness of wet air or chemical oxidation, the Agency believes that it is sound engineering judgment to include a final step of carbon adsorption. This will ensure that the organic constituents in U147 are completely removed from the wastewater matrix. In addition, spent carbon from treating U147 wastewater becomes a nonwastewater form of U147 (54 Federal Register 26630-1, June 23, 1989) and thus must be incinerated. EPA believes that incineration is the most successful method of treatment for a wide variety of organic wastes, and therefore is including carbon adsorption in the oxidation treatment train to ensure ultimate destruction of the remaining organic constituents present in the wastewater.

Comment Number: 44-Ai-1

Docket Number: LD12-00116

Commenter: MONSANTO COMPANY

Issue: Oxygenated Hydrocarbons and Heterocyclic U and P Wastes

Subissue: Oxygenateds

Comment:

H. U147 - Maleic Anhydride Wastewaters

At 54 FR 48413, the Agency has proposed BDAT standards for "Oxygenated Hydrocarbons and Heterocyclics," including U147, maleic anhydride. The Agency has proposed to establish BDAT for U147 wastewaters as technologies:

> "Wet air oxidation or chemical oxidation followed by carbon adsorption; biodegradation followed by carbon adsorption; or incineration as methods of treatment."

The Agency indicates that U147 and other wastes "currently lack analytical methods that can satisfactorily analyze for their constituents of concern in complex waste matrices."

CMA has separately argued persuasively that the Agency should not include carbon adsorption as a BDAT requirement to be used in tandem with wet air or chemical oxidation or biodegradation for this waste class. Polar organic compounds such as maleic acid (derives from maleic anhydride due to hydrolysis) exhibit very poor adsorption on carbon. ("Water and Wastewater Treatment," E.D. Schroeder, 1977, McGraw Hill, p.53)

ISSUE CODE 44: Oxygenated Hydrocarbons and Heterocyclic U and P Wastes

A.-. Oxygenateds

- i. Carbon Adsorption Requirements for U147 (Maleic Anhydride)
- ii. Support a Numerical Standard for U147 (Maleic Anhydride)
- iii. Support a Numerical Standard for U154 (Methanol)
- iv. Caustic Treatment as Alternative BDAT for P003 (Acrolein)
- v. Oppose Nonwastewater Standard for U002 (Acetone)
- vi. Fuel Substitution as BDAT for Oxygenated Hydrocarbon and Heterocyclic Wastes

Comment Number: ~~40~~43-A-1

Docket Number: LD12-L0007

Commenter: Chemical Manufacturers' Association (CMA)

Issue: K025

Subissue: Use of scrubber water data to establish wastewater treatment standards

Response:

As discussed in the Final BDAT Background Document for K025, the Agency is specifying a method of treatment as the treatment standard for both nonwastewater and wastewater forms of K025. For K025 wastewaters, the treatment standard is incineration or liquid-liquid extraction followed by steam stripping followed by activated carbon adsorption followed by incineration of spent carbon as a method of treatment. This treatment standard is based on the Agency's determination that both incineration and the wastewater treatment train are BDAT for wastewater forms of K025. This wastewater treatment train was also determined to be applicable, demonstrated, and available for treatment of the BDAT List constituents quantified in K025 and similar constituents, as discussed in EPA's Final Best Demonstrated Available Technology (BDAT) Background Document for U and P Wastes and Multi-Source Leachates (F039), Volume A.

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Comment Number: ~~40~~43-A-1

Docket Number: LD12-L0007

Commenter: Chemical Manufacturers' Association (CMA)

Issue: K025

Subissue: Use of scrubber water data to establish wastewater treatment standards

Comment:

As stated earlier, incineration is not BDAT for most wastewaters. EPA should not use incinerator scrubber water concentrations of hazardous constituents as the basis of BDAT constituents for any wastewater treatment standards, unless that scrubber water is from an incinerator that actually incinerates wastewater. The standards for organic constituents in K022, K025, K035, and K083 wastewaters should be based on the wastewater treatment data that EPA has presented in the Background Document for wastewaters containing BDAT list constituents (LD12-S1061).

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Comment Number: ~~40~~-A-1

Docket Number: LD12-L0007

Commenter: Chemical Manufacturers' Association (CMA)

Issue: K025

Subissue: Use of scrubber water data to establish wastewater treatment standards

Comment:

W. EPA Inappropriately Bases Proposed Treatment Standards for Organic Constituents in K022, K025, K035, and K083 Wastewaters on Unrepresentative Incinerator Scrubber Blowdown Data, Even Though All Are Readily Biodegradable.

In section III.A.6.e. (54 Fed. Reg. at 48,453), EPA proposes alternate wastewater BDAT standards for K022, K025, K035, and K083 wastewaters that are based on incinerator scrubber data. As the Agency succinctly stated in the BDAT background document for multi-source leachates and in the preamble, incinerator scrubber water is not representative of the achievable BDAT levels for a wastewater, since incinerator scrubber water does not represent treatment of a wastewater containing hazardous constituents. (*See* discussion in subsection B., *supra*) CMA has discussed the technical inadequacies of this data transfer extensively in these comments.

The database accumulated by EPA for the proposed multi-source leachate standards demonstrate that most of the organic constituents in these wastewaters are demonstrated to be biodegradable. For example, toluene, phenol, and chrysene are all removed to detection limits. Those that are not readily treatable by biodegradation (nitrobenzene, 4-nitrophenol) can be treated with activated carbon technology, performance data for which are also available in the EPA's database for multi-source leachate.

cont.

ISSUE CODE 43: K083 - Distillation Bottoms from the Production of Aniline

A.-. Use of Scrubber Water Data to Establish Wastewater Treatment Standards

ISSUE CODE 42: K026 - Stripping Still Tails from the Production of Methyl Ethyl Pyridine

No Comments Were Received for this Waste Code

Comment Number: 41-A-1

Docket Number: LD12-L0007

Commenter: Chemical Manufacturers' Association (CMA)

Issue: K035

Subissue: Use of scrubber water data to establish wastewater treatment standards

Response:

The Agency is basing BDAT treatment standards for wastewater forms of K035 on wastewater treatment performance data transferred from wastes judged to be similar. The Agency prefers, whenever possible, to use wastewater treatment data from well-designed and well-operated wastewater treatment units rather than to base wastewater treatment standards on constituent concentrations in incinerator scrubber water. EPA has compiled a data base of wastewater treatment data for use in establishing treatment standards for wastewater forms of U and P wastes and multi-source leachates. These data, compiled from a variety of sources, were transferred on a constituent-by-constituent basis to K035 organic constituents. The promulgated treatment standards for organic constituents regulated in wastewater forms of K035 were calculated based on these data.

Comment Number: 41-A-1

Docket Number: LD12-L0007

Commenter: Chemical Manufacturers' Association (CMA)

Issue: K035

Subissue: Use of scrubber water data to establish wastewater treatment standards

Comment:

As stated earlier, incineration is not BDAT for most wastewaters. EPA should not use incinerator scrubber water concentrations of hazardous constituents as the basis of BDAT constituents for any wastewater treatment standards, unless that scrubber water is from an incinerator that actually incinerates wastewater. The standards for organic constituents in K022, K025, K035, and K083 wastewaters should be based on the wastewater treatment data that EPA has presented in the Background Document for wastewaters containing BDAT list constituents (LD12-S1061).

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Comment Number: 41-A-1

Docket Number: LD12-L0007

Commenter: Chemical Manufacturers' Association (CMA)

Issue: K035

Subissue: Use of scrubber water data to establish wastewater treatment standards

Comment:

W. EPA Inappropriately Bases Proposed Treatment Standards for Organic Constituents in K022, K025, K035, and K083 Wastewaters on Unrepresentative Incinerator Scrubber Blowdown Data, Even Though All Are Readily Biodegradable.

In section III.A.6.e. (54 Fed. Reg. at 48,453), EPA proposes alternate wastewater BDAT standards for K022, K025, K035, and K083 wastewaters that are based on incinerator scrubber data. As the Agency succinctly stated in the BDAT background document for multi-source leachates and in the preamble, incinerator scrubber water is not representative of the achievable BDAT levels for a wastewater, since incinerator scrubber water does not represent treatment of a wastewater containing hazardous constituents. (*See* discussion in subsection B., *supra*) CMA has discussed the technical inadequacies of this data transfer extensively in these comments.

The database accumulated by EPA for the proposed multi-source leachate standards demonstrate that most of the organic constituents in these wastewaters are demonstrated to be biodegradable. For example, toluene, phenol, and chrysene are all removed to detection limits. Those that are not readily treatable by biodegradation (nitrobenzene, 4-nitrophenol) can be treated with activated carbon technology, performance data for which are also available in the EPA's database for multi-source leachate.

Cont.

ISSUE CODE 41: K035 - WW Treatment Sludges from the Production of Creosote

A.-. Use of Scrubber Water Data to Establish Wastewater Treatment Standards

Comment Number: 40 ~~43~~-B-1

Docket Number: LD12-L0007

Commenter: Chemical Manufacturers' Association (CMA)

Issue: K083

Subissue: Use of scrubber water data to establish wastewater treatment standards

Response:

The Agency is basing BDAT treatment standards for wastewater forms of K083 on wastewater treatment performance data transferred from wastes judged to be similar. The Agency prefers, whenever possible, to use wastewater treatment data from well-designed and well-operated wastewater treatment units rather than to base wastewater treatment standards on constituent concentrations in incinerator scrubber water. EPA has compiled a data base of wastewater treatment data for use in establishing treatment standards for wastewater forms of U and P wastes and multi-source leachates. These data, compiled from a variety of sources, were transferred on a constituent-by-constituent basis to K083 organic constituents. The promulgated treatment standards for organic constituents regulated in wastewater forms of K083 were calculated based on these data.

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Comment Number: ~~43~~-B-1

Docket Number: LD12-L0007

Commenter: Chemical Manufacturers' Association (CMA)

Issue: K083

Subissue: Use of scrubber water data to establish wastewater treatment standards

Comment:

As stated earlier, incineration is not BDAT for most wastewaters. EPA should not use incinerator scrubber water concentrations of hazardous constituents as the basis of BDAT constituents for any wastewater treatment standards, unless that scrubber water is from an incinerator that actually incinerates wastewater. The standards for organic constituents in K022, K025, K035, and K083 wastewaters should be based on the wastewater treatment data that EPA has presented in the Background Document for wastewaters containing BDAT list constituents (LD12-S1061).

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Comment Number: ~~45~~ 40-B-1

Docket Number: LD12-L0007

Commenter: Chemical Manufacturers' Association (CMA)

Issue: K083

Subissue: Use of scrubber water data to establish wastewater treatment standards

Comment:

W. EPA Inappropriately Bases Proposed Treatment Standards for Organic Constituents in K022, K025, K035, and K083 Wastewaters on Unrepresentative Incinerator Scrubber Blowdown Data, Even Though All Are Readily Biodegradable.

In section III.A.6.e. (54 Fed. Reg. at 48,453), EPA proposes alternate wastewater BDAT standards for K022, K025, K035, and K083 wastewaters that are based on incinerator scrubber data. As the Agency succinctly stated in the BDAT background document for multi-source leachates and in the preamble, incinerator scrubber water is not representative of the achievable BDAT levels for a wastewater, since incinerator scrubber water does not represent treatment of a wastewater containing hazardous constituents. (*See* discussion in subsection B., *supra*) CMA has discussed the technical inadequacies of this data transfer extensively in these comments.

The database accumulated by EPA for the proposed multi-source leachate standards demonstrate that most of the organic constituents in these wastewaters are demonstrated to be biodegradable. For example, toluene, phenol, and chrysene are all removed to detection limits. Those that are not readily treatable by biodegradation (nitrobenzene, 4-nitrophenol) can be treated with activated carbon technology, performance data for which are also available in the EPA's database for multi-source leachate.

cont.

Comment Number: 40 ~~43~~-A-1

Docket Number: LD12-00281

Commenter: Mobay

Issue: K083

Subissue: Treatment standards for metals

Response (Continued):

Finally, the commenter's concern that stabilization is BDAT for K083 nonwastewater metals even though K083 is not EP Toxic for metals is irrelevant, since EPA's decision to establish BDAT for metals in K083 nonwastewaters and determine treatment standards for these metals was based on the presence of these metals in incinerator ash at treatable concentrations, and not whether the ash was EP Toxic for metals. In addition, treatment standards are based on constituent concentrations in residuals from treatment by the treatment technology determined to be BDAT, rather than the concentration at which a waste is defined as EP Toxic for a particular constituent.

Comment Number: 40 ~~43~~-A-1

Docket Number: LD12-00281

Commenter: Mobay

Issue: K083

Subissue: Treatment standards for metals

Response:

As discussed in the K083 Background Document and in EPA's Methodology for Developing BDAT Treatment Standards, when performance data from the treatment of a specific waste of concern are not available, the Agency may elect to transfer treatment performance data from a demonstrated technology that treats a similar waste. In determining whether transferring treatment performance data is appropriate, the Agency considers whether the untested waste is (1) generated from a similar industry or processing step and (2) whether the characteristics that affect the performance of the treatment technology are similar for the untested and tested wastes. These criteria provide an indication of how similarly the untested and tested wastes may be treated by a given treatment technology.

Both F024 and K083 are generated by the organic chemicals industry, by some type of separation process. In addition, F024 is expected to have a similar or higher concentration of the constituent of concern (nickel) than K083. Based on similar waste characteristics affecting the performance of stabilization, these wastes are expected to be treated to similar concentrations by stabilization of the incinerator ash. Performance data from stabilization of F006 were not considered appropriate for transfer to K083 because these data are from stabilization of the raw sludge, rather than from stabilization of the nonwastewater treatment residual. Based on these points, the Agency determined that transferring performance data from stabilization of F024 incinerator ash to nonwastewater forms of K083 was valid. In addition, the commenter did not provide the Agency with any treatment performance data indicating that the proposed treatment standard could not be met for nonwastewater forms of K083 or with treatment performance data for metals in nonwastewater forms of K083 on which the Agency could base the treatment standard. Finally, treatment standards for specific BDAT List constituents are not necessarily the same for each waste code containing the regulated constituent, since different levels of treatment can be achieved for a given constituent based on the waste matrix and the treatment technology used.

Because stabilization performance data that constitute a valid transfer of treatment performance data are available, the Agency is basing a numerical treatment standard for metal constituents in nonwastewater forms of K083 on these data as proposed, rather than specifying a method of treatment as the treatment standard. EPA prefers to set concentration-based treatment standards rather than specify methods of treatment in order to allow industry flexibility in meeting the treatment standards. The Agency reminds commenters that the use of other treatment technologies that can achieve the concentration-based treatment standard are not precluded by this Third Third Rule.

Comment Number: ~~43~~ 40-A-1

Docket Number: LD12-00281

Commenter: Mobay

Issue: K083

Subissue: Treatment standards for metals

Comment:

I. Proposed BDAT Standards for Nickel in K083 Nonwastewaters

EPA proposes a numeric BDAT standard for nickel of .088 mg/l in the TCLP extract. EPA states in the preamble that this standard is based on stabilization. The cited Background Documents contained in the RCRA Docket however do not show that stabilization was specifically applied to a K083 nonwastewater subsequent or residues from treatment of K083 waste. There is therefore some question as to whether this standard can be achieved in K083 nonwastewaters.

We also note that in the Second Third Land Disposal Restriction final rulemaking (54 FR 26594 et seq.) several waste codes (F007, F008, F009, F011, F012, K115, P074) had BDAT nonwastewater standards of 0.32 mg/l for nickel (TCLP extract). These standards were based on transfer of stabilization technology from F006. If, in fact, BDAT for nickel-containing nonwastewaters is stabilization, the application of this technology on different waste streams yields different numeric results as evidenced by EPA's different standards. There is therefore no reason _a priori_ as to what levels can be expected on a third different waste stream (K083) without actually testing the waste.

Mobay therefore proposes that EPA adopt a technological BDAT standard for nickel in K083, rather than attempting to specify a limit without first testing the waste stream to verify the level can be obtained. We feel that this is a realistic approach in that:

- The waste stream is currently incinerated with other wastes on-site. Incineration was the model BDAT for this waste in the First Third rulemkaking. Testing of the incinerator ash for EP toxic metals did not show that the ash is EP toxic; consequently, we had no need (until this proposal) to evaluate stabilization.

- Mobay has no experience with stabilization of any of our waste streams and therefore do not know whether or not the proposed numeric standard is routinely achievable or what equipment/permitting is necessary to conduct this on-site.

- Because of our lack of in-house expertise, we will be solely dependent on commercial facilities for some period. If they are not able to meet the standard due to either technical or regulatory limitations (see following comments), Mobay will be forced to apply for a treatment variance. This will take some time to prepare and gain EPA's approval; consequently, our waste management activities could be disrupted if EPA does not accept our proposed change.

ISSUE CODE 40: K025 - Distillation Bottoms from the Production of Nitrobenzene

A.-. Treatment Standards for Metals

B.-. Use of Scrubber Water Data to Establish Wastewater Treatment Standards

Comment Number: 39-B-2

Docket Number: LD12-L0007

Commenter: Chemical Manufacturers' Association (CMA)

Issue: K022

Subissue: Use of scrubber water data to establish wastewater treatment standards

Response:

The Agency is basing BDAT treatment standards for wastewater forms of K022 on wastewater treatment performance data transferred from wastes judged to be similar. The Agency prefers, whenever possible, to use wastewater treatment data from well-designed and well-operated wastewater treatment units rather than to base wastewater treatment standards on constituent concentrations in incinerator scrubber water. EPA has compiled a data base of wastewater treatment data for use in establishing treatment standards for wastewater forms of U and P wastes and multi-source leachates. These data, compiled from a variety of sources, were transferred on a constituent-by-constituent basis to K022 organic constituents. The promulgated treatment standards for organic constituents regulated in wastewater forms of K022 were calculated based on these data.

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Comment Number: 39-B-2

Docket Number: LD12-L0007

Commenter: Chemical Manufacturers' Association (CMA)

Issue: K022

Subissue: Use of scrubber water data to establish wastewater treatment standards

Comment:

As stated earlier, incineration is not BDAT for most wastewaters. EPA should not use incinerator scrubber water concentrations of hazardous constituents as the basis of BDAT constituents for any wastewater treatment standards, unless that scrubber water is from an incinerator that actually incinerates wastewater. The standards for organic constituents in K022, K025, K035, and K083 wastewaters should be based on the wastewater treatment data that EPA has presented in the Background Document for wastewaters containing BDAT list constituents (LD12-S1061).

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Comment Number: 39-B-2

Docket Number: LD12-L0007

Commenter: Chemical Manufacturers' Association (CMA)

Issue: K022

Subissue: Use of scrubber water data to establish wastewater treatment standards

Comment:

W. EPA Inappropriately Bases Proposed Treatment Standards for Organic Constituents in K022, K025, K035, and K083 Wastewaters on Unrepresentative Incinerator Scrubber Blowdown Data, Even Though All Are Readily Biodegradable.

In section III.A.6.e. (54 Fed. Reg. at 48,453), EPA proposes alternate wastewater BDAT standards for K022, K025, K035, and K083 wastewaters that are based on incinerator scrubber data. As the Agency succinctly stated in the BDAT background document for multi-source leachates and in the preamble, incinerator scrubber water is not representative of the achievable BDAT levels for a wastewater, since incinerator scrubber water does not represent treatment of a wastewater containing hazardous constituents. (*See* discussion in subsection B., *supra*) CMA has discussed the technical inadequacies of this data transfer extensively in these comments.

The database accumulated by EPA for the proposed multi-source leachate standards demonstrate that most of the organic constituents in these wastewaters are demonstrated to be biodegradable. For example, toluene, phenol, and chrysene are all removed to detection limits. Those that are not readily treatable by biodegradation (nitrobenzene, 4-nitrophenol) can be treated with activated carbon technology, performance data for which are also available in the EPA's database for multi-source leachate.

cont.

Comment Number: 39-B-1

Docket Number: LD12-00190

Commenter: Union Carbide Chemicals and Plastics Company, Inc.

Issue: K022

Subissue: Use of scrubber water data to establish wastewater treatment standards

Response:

The Agency is basing BDAT treatment standards for wastewater forms of K022 on wastewater treatment performance data transferred from wastes judged to be similar. The Agency prefers, whenever possible, to use wastewater treatment data from well-designed and well-operated wastewater treatment units rather than to base wastewater treatment standards on constituent concentrations in incinerator scrubber water. EPA has compiled a data base of wastewater treatment data for use in establishing treatment standards for wastewater forms of U and P wastes and multi-source leachates. These data, compiled from a variety of sources, were transferred on a constituent-by-constituent basis to K022 organic constituents, including toluene. A treatment standard of 0.080 mg/l, calculated based on these data, is being promulgated for toluene in wastewater forms of K022. The promulgated treatment standards for other organic constituents regulated in wastewater forms of K022 were also calculated based on these data.

Comment Number: 39-B-1

Docket Number: LD12-00190

Commenter: Union Carbide Chemicals and Plastics Company, Inc.

Issue: K022

Subissue: Use of scrubber water data to establish wastewater treatment standards

Comment:

K022 Wastewaters--UCC encourages the Agency to utilize toluene data from the Office of Water Industrial Technology Division's database to establish K022 wastewater toluene standards instead of establishing the standards based on incineration scrubber water. The Office of Water data was used to develop the OCPSF effluent guideline limit for toluene and is based on sound wastewater treatment process technology. This data was also used by the Agency to establish toluene wastewater standards for K037 and multi-source leachate. It is UCC's position that the use of scrubber water data to establish a toluene standard for K022 wastewater is not technically sound. The data would only be valid if K022 waste was the sole waste source to the incinerator (which it was not). In fact, the scrubber water based standard was based on the incineration of a "similar" nonwastewater. Therefore, UCC urges the Agency to adopt a wastewater treatment standard for K022 of 0.080 mg/l instead of the proposed 0.017 mg/l.

Comment Number: 39-Aii-1

Docket Number: LD12-00145

Commenter: Chemical Manufacturers' Association Phenol Panel

Issue: K022

Subissue: Treatment standards

Response (Continued):

The rationale used by the Agency in selecting constituents for regulation is discussed in the Amendment to the K022 Background Document and in EPA's Methodology for Developing BDAT Treatment Standards. Chromium (total) was selected as a regulated constituent due to its presence in the untreated waste and because regulation of chromium (total) is expected to provide for adequate treatment of other metals present in K022 at lesser concentrations. The Agency reminds the commenter that regulation of total chromium includes both trivalent and hexavalent chromium. Deleting chromium (total) as a regulated constituent because hexavalent chromium may not be present would not control for treatment of the other valences of chromium or the other BDAT List metals that were not selected as regulated constituents because regulation of chromium (total) would control for their treatment.

Comment Number: 39-Aii-1

Docket Number: LD12-00145

Commenter: Chemical Manufacturers' Association Phenol Panel

Issue: K022

Subissue: Treatment standards

Response:

As discussed in the Amendment to the K022 Background Document and in EPA's Methodology for Developing BDAT Treatment Standards, when performance data from the treatment of a specific waste of concern are not available, the Agency may elect to transfer treatment performance data from a demonstrated technology that treats a similar waste. In determining whether transferring treatment performance data is appropriate, the Agency considers whether the untested waste is (1) generated from a similar industry or processing step and (2) whether the characteristics that affect the performance of the treatment technology are similar for the untested and tested wastes. These criteria provide an indication of how similarly the untested and tested wastes may be treated by a given treatment technology.

Based on waste characterization data, K062 mixed with metal-bearing characteristic hazardous wastes and K022 wastewater are expected to contain the constituents of concern (chromium and nickel) at similar concentrations. EPA considers K062 wastewaters to be at least as difficult to treat as K022 wastewaters because equal or higher concentrations of metals, dissolved solids, and oil and grease are anticipated in K062 than in scrubber water from incineration of K022. These higher concentrations would interfere more with the effectiveness of the precipitation reactions intended to remove the metals of concern. Based on these points, the Agency determined that transferring performance data from chemical precipitation and vacuum filtration of K062 to wastewater forms of K022 was valid. In addition, the commenter did not provide the Agency with any treatment performance data indicating that the proposed treatment standard could not be met for wastewater forms of K022 or with treatment performance data for metals in wastewater forms of K022 on which to base the treatment standards. Because treatment performance data that constitute a valid transfer are available, the Agency is basing numerical treatment standards for metal constituents in wastewater forms of K022 on these data as proposed.

The statement in the Amendment to the K022 Background Document referenced by the commenter was not intended to mean that hexavalent chromium is not present in any K022 wastes. Available K022 characterization data do not specifically report the concentration of hexavalent chromium. Rather, the data present concentrations of chromium (total), which include the concentrations of all valences of chromium including hexavlent chromium. In addition, recent information collected by the Agency's Office of Research and Development suggest that the treatment of organic- and metal-bearing wastes in an oxidizing environment, such as incineration, generates residues that may contain metals in elevated oxidation states, such as hexavalent chromium.

2/2

Comment Number: 39-Aii-1

Docket Number: LD12-00145

Commenter: Chemical Manufacturers' Association Phenol Panel

Issue: K022

Subissue: Treatment standards

Comment:

In addition, EPA concedes that K022 wastes are not generally known to contain hexavalent chromium and " . . . hexavalent chromium treatment is not necessary . . . ." Background Document, p. 3-4. EPA nevertheless proposed a treatment standard for total chromium of 0.35 mg/l. If, as EPA concedes, K022 wastes are not generally known to contain hexavalent chromium, it is senseless to propose a treatment standard for chromium. Accordingly, the Panel urges EPA to abandon the proposed standard for chromium.

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Comment Number: 39-Aii-1

Docket Number: LD12-00145

Commenter: Chemical Manufacturers' Association Phenol Panel

Issue: K022

Subissue: Treatment standards

Comment:

B. The Treatment Standard for Chromium in K022 Wastewater is Inappropriate and Should be Abandoned

EPA transferred data from K062 wastewater mixed with metal-bearing characteristic waste to establish the treatment standards for metals in K022 wastewaters. See Proposed Amendment to the Final Best Demonstrated Available Technology Background Document for K022 (LD12-S1064) ("Background Document"), p. 3-5. EPA reportedly did so because of a lack of data on the treatment of metal constituents in K022 wastewaters. EPA has proposed a treatment standard of 0.35 mg/l for total chromium in K022 wastewaters.

The Panel disagrees with the proposal. The waste matrices found in K062 may differ substantially from those found in K022. K062 wastewaters are spent pickle liquor wastes generated by iron and steel finishing operations. Pickle liquor typically contains high concentrations of iron and combinations of sulfuric and nitric acids. K022 wastes are fundamentally different. They principally contain organic, as opposed to inorganic, waste. EPA may not adequately have considered this fundamental difference in transferring treatment performance data from K062 to K022 wastewaters.

cont.

Comment Number: 39-Ai-1

Docket Number: LD12-00145

Commenter: Chemical Manufacturers' Association Phenol Panel

Issue: K022

Subissue: Treatment standards

Response:

For wastewater forms of K022, BDAT treatment standards are based on wastewater treatment performance data transferred from wastes judged to be similar. The Agency prefers, whenever possible, to use wastewater treatment data from well-designed and well-operated wastewater treatment units rather than to base wastewater treatment standards on constituent concentrations in incinerator scrubber water. EPA has compiled a data base of wastewater treatment data for use in establishing treatment standards for wastewater forms of U and P wastes and multi-source leachates. These data, compiled from a variety of sources, were transferred on a constituent by constituent basis to K022 organic constituents, including toluene. The F005 treatment standard cited by this commenter was developed from data on the treatment of solvent wastes. These solvent wastes treatment performance data were not considered as appropriate as the previously-referenced wastewater treatment performance data for transfer to K022. The treatment standard of 0.080 mg/l for toluene in K022 wastewaters was calculated based on the performance of wastewater treatment on wastes judged to be similar to K022, as explained in the Amendment to the Final BDAT Background Document for K022. In addition, the commenter did not provide the Agency with treatment performance data indicating that this treatment standard could not be met for wastewater forms of K022 or with treatment performance data for wastewater forms of K022 on which the Agency could base the treatment standard. Finally, treatment standards for specific BDAT List constituents are not necessarily the same for each waste code containing the regulated constituent, since different levels of treatment can be achieved for a given constituent based on the waste matrix and the treatment technology used.

The Agency reminds the commenter that the treatment standard for toluene in F005 wastewaters was based on performance data from biological treatment, while the standard for toluene in K022 wastewaters is based on performance data from steam stripping (as discussed in EPA's Final Best Demonstrated Available Technology (BDAT) Background Document for U and P Wastes and Multi-Source Leachates (F039), Volume A). The methodology used to calculate BDAT treatment standards is based on the level of treatment achieved for a specific treatment technology. The constituent's concentration in the untreated waste, although considered in selecting regulated constituents and in assessing whether substantial treatment has taken place, is not directly included in the treatment standard calculation.

Comment Number: 39-Ai-1

Docket Number: LD12-00145

Commenter: Chemical Manufacturers' Association Phenol Panel

Issue: K022

Subissue: Treatment standards

Comment:

A. The Proposed Standard for Toluene Is Significantly More Stringent Than the F005 Wastewater Treatment Standard

EPA has identified six constituents for K022 wastewaters: acetophenone, diphenylamine/diphenylnitrosoamine, phenol, chromium (total), nickel, and toluene. The proposed treatment standard for toluene is 0.017 mg/l. This standard is approximately 66 times lower than the treatment standard established for toluene in F005 wastewaters, which is 1.12 mg/l. See 40 C.F.R. § 268.41(a) (1988).

EPA has provided no justification for this unnecessarily restrictive standard. Spent toluene F005 wastewaters contain substantially higher concentrations of toluene than do K022 wastewaters. Logically, it follows that the treatment standard for toluene in K022 wastewaters should be no more restrictive than the treatment standard for toluene in F005 wastewaters.

ISSUE CODE 39: K022 - Wastes from the Production of Phenol/Acetone

A.-. Treatment Standards
    i. Organics
    ii. Metals
B.-. Use of Scrubber Water Data to Establish Wastewater Treatment Standards

Point 2. The biological treatment data presented for organic constituents in the F001 - F005 Background Document for the Solvents Rule was in most cases derived from ITD sampling efforts at various facilities. This data has been clearly identified as such in the data tables of the Final Best Demonstrated Available Technology (BDAT) Background Document for U and P Wastes and Multi-source Leachate (F039) Volume A Wastewater Forms of Organic U and P Wastes and Multi-source Leachate (F039) for Which There are Concentration-based Treatment Standards (hereafter referred to as Volume A Wastewater Background Document). The data identified in the OCPSF Development Document and used in determining estimated long term means for calculation of ITD OCPSF BAT standards were taken from Tables VII-7, VII-8, VII-11, and VII-14 of that document and were presented at proposal and for promulgation as ITD data. The Agency carefully reviewed all the data presented in the proposed document and has attempted to identify any situations where treatment performance data were presented twice in the same table of the proposed Wastewaters Background Document and make corrections. However, whether all repeated data were identified or not in this check is irrelevant since the Agency reviewed all the data available for each constituent and chose that set(s) of data representing the "best" treatment performance data as described in Volume A Wastewaters Background Document.

Additionally, there is no indication that the biological treatment data collected as part of the ITD program and presented in the Solvents Rule F001 - F005 Background Document were used in calculating the ITD standards presented in the OCPSF Development Document as is implied by the commentor in their ethylbenzene discussion under Point 2. However, the commenter should note that the variability factor used to calculate the ethylbenzene promulgated standard is an ITD variability factor as opposed to the value of 2.8 used at proposal.

Point 3. The biological treatment performance data presented in the OCPSF Development Document in Table VII-14 was also presented in the proposed Wastewater Background Document (as well as the promulgated version of this document i.e., Volume A Wastewater Background Document) and identified as ITD data. Use of end-of-pipe biological treatment to adjust variabiliry factors and thus, ITD Option 1 standards was discussed in Point 1 above.

Point 4. Between proposal and promulgation EPA has reviewed the proposed Wastewater Background document and has incorporated corrections and additions where necessary. EPA has also reviewed the data bases used, calculation of standards, and transfers of data discussed in the document. Revisions were made to the document based on this review as well as on data received just prior to proposal (i.e. multi-source leachate data and wet air oxidation followed by PACT data) and on comments received during the public comment period. This revised proposal document is being entitled "Final Best Demonstrated Available Technology (BDAT) Background Document for U and P Wastes and Multi-source Leachate (F039), Volume A: Wastewater Forms of Organic U and P Wastes and Multi-source Leachate (F039) for Which There are Concentration-based Treatment Standards" for promulgation and is available in the Third Third Final Rule docket.

In the case of the organic constituents identified by the commentor as missing data, "actual" ITD treatment performance data were not presented in the OCPSF Development Document. Instead, a transfer of steam stripping data for other constituents using Henry's Law Constants or a transfer of biological treatment data were used by ITD to calculate an estimated long term average for these organics.

Thus, only those organic constituents whose ITD standard was based on actual treatment performance data as presented in either Table VII-7, VII-8, VII-11, and VII-14 were considered at the top of the data hierarchy for use in calculating BDAT standards. The following table presents those constituents identified by the commentor as "missed" and indicates the promulgated BDAT standards for these constituents compared with the ITD standards and basis of standard in the OCPSF Development Document.

Constituent	BDAT Std. (mg/l)	Basis	OCPSF Std. (mg/l)	Basis
Carbon tetrachloride	0.057	1	0.038	5
Chlorobenzene	0.057	1	0.028	5
Ethylbenzene	0.057	1	0.108	5
2-Chlorophenol	0.044	2	0.098	5
1,2-Dichlorobenzene	0.088	1	0.163	5
1,3-Dichlorobenzene	0.036	3	0.044	5
1,4-Dichlorobenzene	0.090	2	0.028	5
2,4-Dichlorophenol	0.044	2	0.112	6
2,4-Dinitrotoluene	0.32	4	0.285	6
2,6-Dinitrotoluene	0.55	4	0.641	6
Hexachlorobenzene	0.055	2	0.028	5
Hexachlorobutadiene	0.055	2	0.049	5
Hexachloroethane	0.055	2	0.054	5
1,2,4-Trichlorobenzene	0.055	4	0.140	5

Basis Key:

1 Biological treatment data presented in the Solvents rule.
2 Activated sludge data from the WERL database.
3 Biological treatment data from industry submitted leachate data.
4 PACT treatment data from the WERL database.
5 Steam stripping performance data transferred based on Henry's Law Constant grouping.
6 Standard based on end-of pipe biological treatment.

The Agency reviewed all available treatment performance data for each of these constituents and based BDAT on those technologies whose data showed best treatment. Since actual treatment performance data were not presented in the ITD OCPSF development document for these constituents, the ITD BAT Option 1 standard was not set as BDAT rather the BDAT treatment standard was calculated from the data determined to be best. As was described in the Wastewaters Background Document, the Agency preferred to set the BDAT treatment standard on actual data and used a transfer of data only when actual treatment data were not available.

Comment Number: 38-Bv-1

Docket Number: LD12-L0007

Commenter: The Chemical Manufacturers Association

Issue: Wastewaters Containing BDAT Constituents

Subissue: ITD Effluent Limits

Response:

The Agency has reviewed the commentors submittal and is responding to these issues point-by-point.

Point 1. Industrial Technology Division (ITD) treatment performance data used in the determination of average long term means for specfic constituents were presented in the following tables of the Development Document for Effluent Limitations Guidelines and Standards for the Organic Chemicals, Plastics and Synthetic Fibers Point Source Category (hereafter referred to as the OCPSF Development Document):

VII-7 Steam Stripping Performance Data;

VII-8 Steam Stripping and Activated Carbon Performance Data;

VII-11 Carbon Adsorption Performance Data; and

VII-14 Performance Data Basis for In-Plant Biological Systems

These data were also presented at proposal by constituent in the treatment performance tables of the Background Document for Wastewaters Containing BDAT List Constituents (hereafter referred to as the Wastewaters Background Document). The Agency used the corresponding Option 1 Variability Factor calculated by ITD when calculating the BDAT standard for organic U and P wastes whose constituents of concern were represented in this data. The Option 1 BAT Subcategory represents end-of-pipe biological treatment above and beyond the in-plant treatment technology (which is the data used in determining the estimated long term mean). The Option 1 Variability Factors, therefore, take into account additional treatment by an end-of-pipe biological unit. Thus, while the basis of treatment for the standards for these constituents is either steam stripping, carbon adsorption, and/or biological treatment, the ultimate ITD standard under Option 1 is generally more stringent than under Option 2 because of the difference in Option 1 and Option 2 (without end-of-pipe treatment) Variability Factors. The technology used in determining the average long term mean was used in determining BDAT for organic U and P wastewaters for which "actual" ITD treatment performance data were available.

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Comment Number: 38-BV-1

Docket Number: LD12-L0007

Commenter: THE CHEMICAL MANUFACTURERS ASSOCIATION (continued)

Issue: WASTEWATERS CONTAINING BDAT CONSTITUENTS

Subissue: WASTEWATERS BACKGROUND DOCUMENT- ITD EFFLUENT LIMITS

Comment:

4. **The BDAT Background Document for Wastewaters Needs an In-depth Technical Review Before the Final Standards and Report Are Issued.**

The nature of the errors identified above suggests that the individuals that prepared the BDAT report were unfamiliar with the databases that were used, especially the OCPSF database. The Agency's oversights and misjudgements in using the data has eroded the public's confidence in the proposed BDAT limits.

CMA recommends that EPA conduct a thorough quality control review of the databases and calculations that are presented in the BDAT background document for wastewaters. This should include a direct comparison of the BDAT constituent standards for wastewaters with the BAT effluent limitations guidelines for every constituent, organics and metals, for which BAT limits have been promulgated.

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Comment Number: 38-BV-1

Docket Number: LD12-L0007

Commenter: THE CHEMICAL MANUFACTURERS ASSOCIATION (continued)

Issue: WASTEWATERS CONTAINING BDAT CONSTITUENTS

Subissue: WASTEWATERS BACKGROUND DOCUMENT - ITD EFFLUENT LIMITS

Comment:

change with respect to the proposed numerical standards, it is important because the technology must be demonstrated and available before it is cited as BDAT. In this instance, in-plant biological treatment does not meet this definition, and the Background Document for wastewaters should not indicate that this treatment exists.

6/8

Comment Number: 38-BV-1

Docket Number: LD12-L0007

Commenter: THE CHEMICAL MANUFACTURERS ASSOCIATION (continued)

Issue: WASTEWATERS CONTAINING BDAT CONSTITUENTS

Subissue: WASTEWATERS BACKGROUND DOCUMENT - ITD
EFFLUENT LIMITS

omment:

3. The Agency Has Identified Certain of the OCPSF Treatability Data as Representing In-plant Biological Treatment. However, All OCPSF Data Are From End-Of-Pipe Biological Treatment Systems.

In the Background Document for wastewaters containing BDAT list constituents (LD12-S1061), EPA identifies certain biological treatment data as representing in-plant biological treatment data (*see* for example, page 4-3, Table 4-4). EPA developed the term "in-plant biological treatment" in the final OCPSF rule to establish BAT Subpart J effluent limits (40 C.F.R. § 414.92) and pretreatment limits for some 20 organic constituents. This technology was supposed to be available for OCPSF plants that could not install end-of-pipe biological treatment systems because of land constraints. However, EPA had no data for in-plant biological treatment of specific organic constituents, so the Agency used end-of-pipe biological treatment data to establish these limits.

This unsupported technology transfer was challenged by CMA in the Fifth Circuit Court of Appeals. CMA's argument on this subject convinced the Court that EPA had incorrectly derived ~~these~~ standards. The standards that were supposedly "based" ~~on in~~-plant biological treatment were thus remanded back to EPA.

Although correcting this terminology is a minor

Comment Number: 38-BV-1

Docket Number: LD12-L0007

Commenter: THE CHEMICAL MANUFACTURERS ASSOCIATION (continued)

Issue: WASTEWATERS CONTAINING BDAT CONSTITUENTS

Subissue: WASTEWATERS BACKGROUND DOCUMENT-ITD EFFLUENT LIMITS

Comment:

plants. The long-term average effluent ethylbenzene concentration of 10 ug/l presented in the BDAT report for wastewaters is the same as that in the OCPSF report. However, in the proposed rule the BDAT variability factor for ethylbenzene is specified as 2.8 (Table 4-173, Background Document for wastewaters containing BDAT list constituents (LD12-S1061)). The actual ethylbenzene variability factor should be 10.74 as shown in the OCPSF Development Document (Table VII-66, Reference 11, Background Document for wastewaters containing BDAT list constituents (LD12-S1061)). EPA failed to use the actual effluent concentrations presented in the solvents and dioxins background document to calculate a variability factor or the variability factor presented in the OCPSF Development Document. The Agency thus lost some of the most important information in the ethylbenzene database and has developed ethylbenzene standards that may not be achievable with the designated technology.

CMA also suspects, although it has not had adequate time to investigate this suspicion, that a significant amount of the WERL data cited by EPA are also the disguised OCPSF data. If so, then the same problem could potentially occur when the WERL data were specified as the basis for a proposed BDAT constituent limit.

Comment Number: 38-BV-1

Docket Number: LD12-L0007

Commenter: THE CHEMICAL MANUFACTURERS ASSOCIATION (continued)

Issue: WASTEWATERS CONTAINING BDAT CONSTITUENTS

Subissue: WASTEWATERS BACKGROUND DOCUMENT - STD EFFLUENT LIMITS

Comment:

- 2. **Much of the Data on Organic Constituents Is Derived From the Same Origin. EPA May Have "Double-counted" in its BDAT Analysis Where Data From the Secondary References Has Been Manipulated and the Summarized Data Does Not Accurately Reflect the Individual Data Sets.** ←

As pointed out in the preceding comment, the majority of wastewater data for organic constituents that was used to develop the wastewater BDAT limits for the solvents and dioxins land disposal restrictions came from the OCPSF effluent limitations guidelines database. These data were misused or misinterpreted in some instances, however.

For example, the proposed wastewater standard for ethyl benzene is based on biological treatment, using BDAT study data as cited by the Agency (Table 4-27, Background Document for wastewaters containing BDAT list constituents (LD12-S1061)). There are 14 biological treatment plants in the ethylbenzene tabulation, and every one of them is an OCPSF plant (*see* Table 5-12, Best Demonstrated Available Technology (BDAT) Background Document for F001-F005 Spent Solvents, Volume 2, LDR-3b.-S0004b, November 1987).

Table VII-64 of the OCPSF Development Document (Reference 11, Background Document for wastewaters containing BDAT list constituents (LD12-S1061)), shows the long-term average effluent ethylbenzene concentrations for these 14

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Comment Number: 38-BV-1

Docket Number: LD12-L0007

Commenter: THE CHEMICAL MANUFACTURERS ASSOCIATION (continued)

Issue: WASTEWATERS CONTAINING BDAT CONSTITUENTS

Subissue: WASTEWATERS BACKGROUND DOCUMENT- ITD EFFLUENT LIMITS

Comment:

EPA has committed the same error for other organic chemicals. These chemicals, with their respective BAT limits from 40 C.F.R. § 414.91, are listed as follows:

chlorobenzene (28 ug/l);
ethylbenzene (108 ug/l);
2-chlorophenol (98 ug/l);
1,2-dichlorobenzene (163 ug/l);
1,3-dichlorobenzene (44 ug/l);
1,4-dichlorobenzene (28 ug/l);
2,4-dichlorophenol (112 ug/l);
2,4-dinitrotoluene (285 ug/l);
2,6-dinitrotoluene (641 ug/l);
hexachlorobenzene (28 ug/l);
hexachlorobutadiene (49 ug/l);
hexachloroethane (54 ug/l); and 1,2,4-trichlorobenzene (140 ug/l).

EPA should change the proposed standards for all of the above constituents in wastewater to the appropriate BAT limits. It should also revise the standards for any constituents that have proposed standards based on technology transfer from the standards for these constituents. EPA should also carefully review all promulgated BAT effluent limitations guidelines to assure this error has not occurred for other constituents.

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Comment Number: 38-BV-1

Docket Number: LD12-L0007

Commenter: THE CHEMICAL MANUFACTURERS ASSOCIATION (continued)

Issue: WASTEWATERS CONTAINING BDAT CONSTITUENTS

Subissue: WASTEWATERS BACKGROUND DOCUMENT - ITD EFFLUENT LIMITS

Comment:

constituents (LD12-S1061)). The alleged sources of these data are full-scale data developed for the BDAT guidelines. In fact, review of Table 4-9 reveals that these are actually the ITD OCPSF long-term average concentrations used for the solvents and dioxins rule (see pages 5-23, 5-24, and 5-25, Best Demonstrated Available Technology (BDAT) Background Document for F001-F005 Spent Solvents, Volume 2, LDR-3b.-S0004b, November 1987). The biological treatment-based BDAT standard for carbon tetrachloride in wastewater used in the solvents and dioxins rule is 50 ug/l rather than the 32 ug/L proposed in this EPA report. This is because in the solvents and dioxins LDR rulemaking, the Agency used a variability factor calculated from actual carbon tetrachloride data in the final rule, rather than the generic variability factor cited in the report and used in the proposed rule. More importantly however, the Agency overlooked promulgated BAT standard for carbon tetrachloride in OCPSF wastewaters of 38 ug/L (40 C.F.R. § 414.91). This latter concentration is the appropriate wastewater standard for carbon tetrachloride based on EPA's stated BDAT methodology for wastewaters.

Comment Number: 38 - BV - 1

Docket Number: LD12 - L0007

Commenter: THE CHEMICAL MANUFACTURERS ASSOCIATION

Issue: WASTEWATERS CONTAINING BDAT CONSTITUENTS

Subissue: WASTEWATERS BACKGROUND DOCUMENT – ITD EFFLUENT LIMITS

Comment:

DD. Errors in the BDAT Background Document for Wastewaters, Some of Which Result in Incorrectly Selected Technologies and/or BDAT Limits, Indicate That the Document Was Not Given an Adequate Level of Technical Review Before It Was Published and Used for the Proposed Limits.

While CMA supports the use of the ITD database for constituents in wastewaters and multi-source leachates, there are several errors in the database which we urge the Agency to correct.

1. There Are Significant Errors in the Proposed Wastewater Constituent Standards for Multi-source Leachates, Because EPA Overlooked the ITD Effluent Limitations Guidelines That Have Been Promulgated for a Number of Organic Chemical Constituents.

In EPA's hierarchy for developing wastewater BDAT limits the ITD data that were developed to promulgate effluent limitations guidelines for many industrial categories are supposed to be given highest precedence (page 4-1, Background Document for wastewaters containing BDAT list constituents (LD12-S1061)). As stated earlier in these comments, CMA strongly supports this decision. However, as pointed out below, for some constituents the Agency did not follow this methodology and either incorrectly used the ITD data or used alternate, less reliable data to develop the proposed limits.

The proposed standard for carbon tetrachloride is supposed to be based on biological treatment (page 4-17, Background Document for wastewaters containing BDAT list

Comment Number: 38-Biv-1

Docket Number: LD12-L0007

Commenter: The Chemical Manufacturers Association

Issue: Wastewaters Containing BDAT Constituents

Subissue: Wastewaters Background Document - Variability Factors

Response:

The Agency agrees with the commenter that in general a 2.8 variability factor should only be used when treatment performance data represent not detected values. Therefore, for promulgation in cases where a specific variability factor (VF) and accuracy correction factor (ACF) cannot be determined for volatile and semivolatile U and P wastewaters, the Agency is using an average ITD VF as proposed by the commenter. The average ITD VFs were determined for volatiles, acid neutral semivolatiles, and base neutral semivolatiles in a manner similar to determining average ACFs from percent recovery data. Since ITD VFs account for both process and analytical variation, calculations using these VFs do not include a separate ACF. Average ITD variability factors are discussed in greater detail in Section 6.0 of EPA's Final Best Demonstrated Available Technology (BDAT) Background Document for Organic U and P Wastes and Multi-source Leachate (F039) Volume A - Wastewater Forms of Organic U and P Wastes and Multi-source Leachate (F039) for Which There are Concentration-based Treatment Standards.

For organic constituents which do not fall into the volatile and semivolatile categories, an ITD VF could not be used for calculating the BDAT concentration-based standard. In these cases a VF and ACF were determined on a case-by-case basis and are discussed in detail in Section 6.0 of EPA's Final Best Demonstrated Available Technology (BDAT) Background Document for Organic U and P Wastes and Multi-source Leachate (F039) Volume A Wastewater Forms of Organic U and P Wastes and Multi-source Leachate (F039) for Which There are Concentration-based Treatment Standards.

A variability factor of 10 was used to adjust the vanadium standard for multi-source leachate wastewaters. The Agency believes that this variability factor will account for both process and analytical variations.

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Comment Number: 38 - Biv - 1

Docket Number: LD12 - L0007

Commenter: THE CHEMICAL MANUFACTURERS ASSOCIATION (continued)

Issue: WASTEWATERS CONTAINING BDAT CONSTITUENTS

Subissue: WASTEWATERS BACKGROUND DOCUMENT - VARIABILITY FACTORS

Comment:

To remedy this situation, two approaches could be followed, both relying on the ITD variability factors. The preferred method would be to assign the appropriate ITD variability factors to all of the constituents in a treatability group; for example, the variability factor for 2,4-dimethyl phenol could be assigned to the cresols. An alternate approach would be to pool all of the ITD variability factors for the organic constituents, select the median variability factor, and apply this variability factor to all of the organic constituents for which ITD data are unavailable. The same should be done for the variability factor for vanadium (the only metal without ITD data).

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Comment Number: 38 - BIV - 1

Docket Number: LD12- LD007

Commenter: THE CHEMICAL MANUFACTURERS ASSOCIATION

Issue: WASTEWATERS CONTAINING BDAT CONSTITUENTS

Subissue: WASTEWATERS BACKGROUND DOCUMENT - VARIABILITY FACTORS

Comment:

CC. The Variability Factor the Agency Used To Calculate Wastewater Standards Not Based on ITD Data Does Not Reflect the Expected Process and Waste Variability of Wastewater Treatment Processes.

On page 4-305 of the Background Document for wastewaters containing BDAT list constituents (LD12-S1061), EPA states that it used a single variability factor of 2.8 for all BDAT standards that are not based on ITD standards. This factor is based on the assumption that all concentrations of a constituent in a treated waste are below the analytical method detection limit (Appendix A-3, Methodology for Developing Best Demonstrated Available (BDAT) Treatment Standards (Docket No. LD10-S0012)). It was developed when the majority of the BDAT standards were being based on incineration of nonwastewaters and the use of scrubber water data for wastewaters.

As shown by the variability factor data calculated from the long-term ITD data (Table 4-173, Background Document for wastewaters containing BDAT list constituents (LD12-S1061)), variability factors for constituents in treated wastewaters as low as or below 2.8 are the exception. By assigning a variability factor of 2.8 to all constituents for which no ITD data are available, the Agency has grossly underestimated the variability of wastewater treatment processes and has, in some cases, developed proposed BDAT limits that may be unachievable.

cont.

Comment Number: 38-Biii-1

Docket Number: LD12-L0007

Commenter: The Chemical Manufacturers Association

Issue: Wastewaters Containing BDAT Constituents

Subissue: Wastewaters Background Document - Database Hierarchy

Response:

As pointed out and supported by the commenter, the Agency has established a hierarchy of data for use in determining the best demonstrated and available technology to use in setting organic U and P and multi-source leachate wastewater concentration-based standards. At proposal, ITD data used in developing ITD promulgated limits were used in preference to other data since the ITD database is a very comprehensive source of wastewater treatment data and generally represents longer term sampling and a greater number of sample sets than other wastewater treatment databases.

Just prior to proposal, EPA received leachate treatment performance data submitted by industry. These data were submitted to show substantial treatment of constituents industry did not believe could be treated to the proposed standards. The Agency carefully reviewed these data, and in some cases, has used the multi-source leachate treatment performance data to calculate a promulgated BDAT concentration-based standard. EPA believes that the industry submitted data used represents treatment of the actual waste of concern (i.e. multi-source leachate) and therefore more accurately represents the level of treatment achievable. The specific instances where these data were used are documented in EPA's Final Best Demonstrated Available Technology (BDAT) Background Document for Organic U and P Wastes and Multi-source Leachates (F039) Volume A Wastewater Forms of Organic U and P Wastes and Multi-source Leachates (F039) for Which There are Concentration-based Treatment Standards. For other constituents, the ITD data were still considered the "top of the hierarchy".

Comment Number: 38-Biii-1

Docket Number: LD12-LD007

Commenter: THE CHEMICAL MANUFACTURERS ASSOCIATION

Issue: WASTEWATERS CONTAINING BDAT CONSTITUENTS

Subissue: WASTEWATERS BACKGROUND DOCUMENT- DATABASE HIERARCHY

Comment:

BB. EPA's Database Hierarchy for Wastewater Data That Are Used To Develop BDAT Limits Is Sound.

EPA has developed a hierarchy of data for use in calculating BDAT standards for wastewater (page 4-1, Background Document for wastewaters containing BDAT list constituents (LD12-S1061)). In this hierarchy, the Agency give precedence to the ITD data developed to promulgate effluent limitations guidelines for many industrial categories. When a standard for best available technology economically achievable (BAT) is available for a specific wastewater constituent, that is used as the BDAT standard. ITD data that did not result in a BAT standard for a constituent are used as the second-most reliable estimator of performance.

~~As~~ CMA stated earlier in these comments, the ITD database ~~is~~ the most comprehensive source of wastewater treatment data available for assessing the treatment performance for specific constituents. CMA strongly supports the data hierarchy that EPA uses to establish the proposed BDAT standards for wastewaters.

Comment Number: 38-Bii-1

Docket Number: LD12-L0007

Commenter: The Chemical Manufacturers Association

Issue: Wastewaters Containing BDAT Constituents

Subissue: Wastewaters Background Document - Demonstrated Technologies

Response:

As pointed out and supported by the commenter, the Agency defines "demonstrated" technologies as those in full-scale operation treating the waste in question or a similar waste. Since most organic U and P wastewaters represent a specific constituent of concern, technologies were considered "demonstrated" if they were shown or believed to be in full-scale operation treating the constituent of concern or a similar constituent.

Comment Number: 38-Bii-1

Docket Number: LD12-L0007

Commenter: THE CHEMICAL MANUFACTURERS ASSOCIATION

Issue: WASTEWATERS CONTAINING BDAT CONSTITUENTS

Subissue: WASTEWATERS BACKGROUND DOCUMENT- DEMONSTRATED TECHNOLOGIES

Comment:

AA. EPA Has Defined "Demonstrated" BDAT Technologies for Wastewaters as Being Systems Whose Operation Is Proven in Full-Scale Treatment Units.

In its BDAT methodology, EPA states that only technologies that are in full-scale operation treating the waste in question, or a similar waste, are considered to be "demonstrated" technology (page 3-3, Background Document for wastewaters containing BDAT list constituents (LD12-S1061)). CMA supports this definition and urges the Agency to use it in every possible instance. We recognize, however, that in some- cases technology transfer will be required to develop BDAT standards for specific wastes and constituents.

Comment Number: 38-Bi-1

Docket Number: LD12-L0007

Commenter: The Chemical Manufacturers Association

Issue: Wastewaters Containing BDAT Constituents

Subissue: Wastewaters Background Document - Data Screening

Response:

As pointed out and supported by the commenter, EPA has data on actual wastewater treatment performance tests. The Agency prefers to use this data to establish standards for wastewaters as these data more closely represent the kinds of treatment that wastewater forms of the U and P wastes and multi-source leachates are likely to undergo. Additionally, where constituent specific data were unavailable, transfers were made from this pool of wastewater treatment data. Since the wastewater data were available for these wastes, the Agency is not using incinerator scrubber water data to set BDAT standards for multi-source leachates or organic U and P wastewaters.

Comment Number: 38-Bi-1

Docket Number: LD12-L0007

Commenter: THE CHEMICAL MANUFACTURERS ASSOCIATION

Issue: WASTEWATERS CONTAINING BDAT CONSTITUENTS

Subissue: WASTEWATERS BACKGROUND DOCUMENT - DATA SCREENING

Comment:

Z. CMA Supports EPA's Data Screening Criteria for Selecting Data Sets for Development of Wastewater Standards.

In section 3.0 of the Background Document for wastewaters containing BDAT list constituents (LD12-S1061), EPA describes its screening criteria for selecting wastewater performance data. These include not using incinerator scrubber water data and not using BDAT standards that were transferred from another waste.

These are valid data screening criteria and CMA supports their use.

Comment Number: 38-Aiii-5

Document Number: LD12-L0007

Commenter: The Chemical Manufacturers Association

Issue: Wastewaters Containing BDAT Constituents

Subissue: Biotreatment Data as BDAT for Wastewater Standards

Response:

Promulgated standards for organic U and P wastewaters are being based on the wastewater treatment performance data used for setting BDAT for multi-source leachate wastewaters instead of incinerator scrubber water concentrations. BDAT for wastewaters containing U and P phenolic wastes is either biological treatment or carbon adsorption with the exception of 2-sec-butyl-4,6-dinitrophenol (P020) which has a BDAT of wet air oxidation followed by PACT. Where the Agency has biological treatment performance data that demonstrate substantial treatment, meet BDAT QA/QC requirements, and represent the "best" treatment performance data of those available, the Agency is using those data. Where biotreatment data for a certain constituent were not available or did not meet the requirements of "BDAT", data on a technology other than biotreatment were used as BDAT. For example, numerical treatment standards are also based on other forms of wastewater treatment that showed substantial treatment and meet BDAT requirements, such as carbon adsorption and wet air oxidation followed by PACT in the case of 2-sec-butyl-4,6-dinitrophenol.

As a final point, since concentration-based standards are being set for organic U and P wastewaters, industry may use technologies other than those specified as BDAT to treat their wastewater to the BDAT standard so long as the other technologies do not constitute impermissible dilution or land disposal. Thus, biological treatment is not precluded from use even if the basis of the concentration-based standard (BDAT) is a different technology.

Comment Number: 38- Aiii- 5

Docket Number: LD12 - L0007

Commenter: THE CHEMICAL MANUFACTURERS ASSOCIATION

Issue: WASTEWATERS CONTAINING BDAT CONSTITUENTS

Subissue: BIOTREATMENT DATA AS BDAT FOR WASTEWATER STANDARDS

Comment:

H. Wet Air Oxidation, Powdered Activated Carbon (PACT), and Carbon Adsorption Are Not Required Wastewater Treatment Technologies for the Majority of "U" and "P" Phenolics. As Shown by the Multi-source Leachate Wastewater Standards Database, These Chemicals Are Removed to Detection Levels Through Biological Treatment.

EPA states that it is collecting performance data for wet air oxidation, powdered activated carbon treatment (PACT), and carbon adsorption for treatment of wastewaters containing "U" and "P" phenolic wastes (54 Fed. Reg. at 48,412). The Agency indicates that it will probably use these data instead of the incinerator scrubber data presented in the proposed rules as BDAT standards for phenolic wastes.

As shown by the data presented in the Background Document for wastewaters containing BDAT list constituents (LD12-S1061), biological treatment provides demonstrated and effective treatment for most phenolics. Short-term tests of other treatment technologies, such as PACT, do not provide comparable demonstrations of long-term performance and should only be used if there are not adequate data in the Background Document for a particular "U" or "P" constituent.

CMA recommends that all wastewater treatment BDAT limits for "U" and "P" phenolic wastes be based on biological treatment, unless long-term data demonstrate that biodegradation of a phenolic constituent is impractical.

Comment Number: 38-Aiii-4

Document Number: LD12-00179

Commenter: The Dow Chemical Company

Issue: Wastewaters Containing BDAT Constituents

Subissue: Biotreatment Data as BDAT for Wastewater Standards

Response:

Promulgated standards for organic U and P wastewaters are being based on the wastewater treatment performance data used for setting BDAT for multi-source leachate wastewaters instead of incinerator scrubber water concentrations. BDAT for chlorinated organics includes several different technologies including biological treatment. Where the Agency has biological treatment performance data that demonstrate substantial treatment, meet BDAT QA/QC requirements, and represent the "best" treatment performance data of those available, the Agency is using those data. However, numerical treatment standards are also based on other forms of wastewater treatment that showed substantial treatment and meet BDAT requirements.

The Agency reviewed the biological treatment performance data presented by the commentor and compared this data against that used in setting BDAT at proposal. In almost all cases the Agency found that the BDAT data used at proposal showed higher influent concentrations of the constituent of concern and similar or better removal efficiencies. In all cases, the commentors biological treatment data can meet the standards set by the BDAT technologies. Therefore, these data were not used to revise any of the proposed standards.

As a final point, since concentration-based standards are being set for organic U and P wastewaters, industry may use other technologies other than those specified as BDAT to treat their wastewater to the BDAT standard so long as the other technologies do not constitute impermissible dilution or land disposal. Thus, biological treatment is not precluded from use even if the basis of the concentration-based standard (BDAT) is a different technology.

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Comment Number: 38-Aiii-4

Docket Number: LD12- 00179

Commenter: THE DOW CHEMICAL COMPANY (continued)

Issue: WASTEWATERS CONTAINING BDAT CONSTITUENTS

Subissue: BIOTREATMENT DATA AS BDAT FOR WASTEWATER STANDARDS

Comment:

TABLE 3

SUMMARY OF BDAT CONSTITUENT ANALYSES CONDUCTED ON WASTEWATER TREATMENT PLANT INFLUENT

CONSTITUENT	BIOLOGIC WWTP INFLUENT AVERAGE (ppb)	BIOLOGIC WWTP EFFLUENT AVERAGE (ppb)	BIOLOGIC WWTP PERCENT REMOVAL
Bis(2-chloroethoxy)methane	165	10	94
Carbon tetrachloride	44	5	89
Cholorbenzene	453	5	99
Chloroform	302	12	96
Chloromethane	1160	10	99
Dibromomethane	42	5	88
1,2-Dichlorobenzene	318	10	97
1,3-Dichlorobenzene	103	10	90
p-Dichlorobenzene	280	10	96
1,1-Dichloroethylene	2482	5	100
2,4-Dichlorophenol	202	10	95
2,4-Dichlorophenoxyacetic acid	109	3	97
Hexachlorobenzene	88	10	89
Methylene chloride	2800	5	100
Pentachlorobenzene	64	10	84
Pentachlorophenol	110	10	91
Silvex	2	2	0
2,4,5-T	1	1	70
1,2,4,5-Tetrachlorobenzene	202	10	95
Tetrachoroethene	26	5	81
1,2,4-Trichlorobenzene	101	10	97
Vinyl Chloride	81	10	88
TOTAL	9561	167	98

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Comment Number: 38-Aiii-4

Docket Number: LD12-00179

Commenter: THE DOW CHEMICAL COMPANY (continued)

Issue: WASTEWATERS CONTAINING BDAT CONSTITUENTS

Subissue: BIOTREATMENT DATA AS BDAT FOR WASTEWATER STANDARDS

Comment:

TABLE 2

SUMMARY OF BDAT CONSTITUENT ANALYSES CONDUCTED ON WASTEWATER TREATMENT PLANT EFFLUENT

CONSTITUENT	WWTP EFFLUENT (all concentrations in ppb)					
	7/21/89*	LAB DUP. 7/21/89*	8/16/89	8/11/89	FIELD DUP. 8/11/89	AVERAGE
Bis(2-chloroethoxy)methane	10 U	10 U	10 U	10 U	10 U	10
Carbon tetrachloride	5 U	5 U	5 U	5 U	5 U	5
Cholorbenzene	5 U	5 U	5 U	5 U	5 U	5
Chloroform	6	5	19	10	10	12
Chloromethane	10 U	10 U	10 U	10 U	10 U	10
Dibromoethane	5 U	5 U	5 U	5 U	5 U	5
1,2-Dichlorobenzene	10 U	10 U	10 U	10 U	10 U	10
1,3-Dichlorobenzene	10 U	10 U	10 U	10 U	10 U	10
p-Dichlorobenzene	10 U	10 U	10 U	10 U	10 U	10
1,1-Dichloroethylene	5 U	5 U	5 U	5 U	5 U	5
2,4-Dichlorophenol	10 J	10 J	10 J	10 J	10 J	10
2,4-Dichlorophenoxyacetic acid	3 U	3 U	3 U	3 U	3 U	3
Hexachlorobenzene	10 U	10 U	10 U	10 U	10 U	10
Methylene chloride	5 U	5 U	5 U	5 U	5 U	5
Pentachlorobenzene	10 U	10 U	10 U	10 U	10 U	10
Pentachlorophenol	10 U	10 U	10 U	10 U	10 U	10
Silvex	4	4	1 U	1 U	1 U	2
2,4,5-T	1 U	1 U	1	1 U	1 U	1
1,2,4,5-Tetrachlorobenzene	10 U	10 U	10 U	10 U	10 U	10
Tetrachoroethene	5 U	5 U	5 U	5 U	5 U	5
1,2,4-Trichlorobenzene	10 U	10 U	10 U	10 U	10 U	10
Vinyl Chloride	10 U	10 U	10 U	10 U	10 U	10
AVERAGE						8

U-QUANTIFICATION LIMIT; J ESTIMATED VALUE BELOW THE QUANTIFICATION LIMIT; B CONSTITUENT ALSO DETECTED IN THE BLANK

cont.

2/4

Comment Number: 38-Aiii-4

Docket Number: LD12-00179

Commenter: THE DOW CHEMICAL COMPANY (continued)

Issue: WASTEWATERS CONTAINING BDAT CONSTITUENTS

Subissue: BIOTREATMENT DATA AS BDAT FOR WASTEWATER STANDARDS

Comment:

TABLE 1
SUMMARY OF BDAT CONSTITUENT ANALYSES CONDUCTED ON WASTEWATER TREATMENT PLANT INFLUENT

CONSTITUENT	WWTP INFLUENT (all concentrations in ppb)					
	7/20/89*	FIELD DUP. 7/20/89*	8/10/89	LAB DUP. 8/10/89	8/15/89	AVERAGE
Bis(2-chloroethoxy)methane	590	200 U	50 U	50 U	50 U	165
Carbon tetrachloride	50 U	50 U	34	32	50 U	44
Cholorbenzene	570	600	420	390	370	453
Chloroform	76	85	290	250	560	302
Chloromethane	850	100 U	770	640	2900	1360
Dibromomethane	50 U	50 U	43	41 *	34 J	42
1,2-Dichlorobenzene	670	400	230	230	210	338
1,3-Dichlorobenzene	240	170 J	59	56	46 J	103
p-Dichlorobenzene	560	400	190	190	170	280
1,1-Dichloroethylene	50 U	50 U	7400	6700	346	2482
2,4-Dichlorophenol	170 J	230	250	260	150	202
2,4-Dichlorophenoxyacetic acid	3 U	6 U	3 U	3 U	320	109
Hexachlorobenzene	200 U	200 U	71	18 J	18 J	88
Methylene chloride	1800 B	1800 B	2200	1800	4600	2800
Pentachlorobenzene	98 J	67 J	57	61	51	64
Pentachlorophenol	200 U	200 U	8 J	91	80	110
Silvex	3	2 U	1 U	1 U	2 U	2
2,4,5-T	1 U	6 U	1 U	1 U	6	3
1,2,4,5-Tetrachlorobenzene	320	200	170	180	170	202
Tetrachoroethene	30 J	33 J	31	25	18 J	26
1,2,4-Trichlorobenzene	200 U	190	150	360	260	303
Vinyl Chloride	100 U	100 U	51	44 J	100 U	83
AVERAGE						435

U=QUANTIFICATION LIMIT; J-ESTIMATED VALUE BELOW THE QUANTIFICATION LIMIT; B CONSTITUENT ALSO DETECTED IN THE BLANK;
*-COMPOSITING OCCURRED 50/50 BETWEEN PHENOLIC AND GENERAL INFLUENTS

cont.

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Comment Number: 38-Aiii-4

Docket Number: LD12-00179

Commenter: THE DOW CHEMICAL COMPANY

Issue: WASTEWATERS CONTAINING BDAT CONSTITUENTS

Subissue: BIOTREATMENT DATA AS BDAT FOR WASTEWATER STANDARDS

Comment:

XIII. USE OF BIOLOGICAL TREATMENT FOR THE DESTRUCTION OF CHLORINATED ORGANICS SHOULD BE ALLOWED.

54 Fed. Reg. 48,393 column 1

EPA states that biodegradation is not regarded as BDAT for halogenated organics and requests comment on the biodegradability of chlorinated organics in wastewaters. Dow believes that biological treatment is a proven and acceptable BDAT treatment for soluable chlorinated organics in wastewaters.

Presented on tables 1 - 3 (pages 40 - 42) are data that were collected from an operating Dow aggressive biological wastewater treatment plant (WWTP) that handles approximately 20 million gallons per day of wastewater from various sources. Table 1 shows the WWTP influent chlorinated organic constituents that were detected during at least one of three rounds of analyses for the BDAT list of constituents.

Table 2 shows the WWTP effluent concentrations for the three rounds of BDAT analyses for each of the constituents listed in table 1. Table 3 shows that the net resultant removal efficiency of chlorinated organics during aggressive biological treatment is 98 percent. Dow believes that this demonstrates that aggressive biological treatment is a proven BDAT treatment process for chlorinated organics in wastewaters and consequently should be recognized as an acceptable treatment for chlorinated organic wastewaters.

cont.

Comment Number: 38-Aiii-3

Document Number: LD12-00138

Commenter: Occidental Chemical Corporation

Issue: Wastewaters Containing BDAT Constituents

Subissue: Biotreatment Data as BDAT for Wastewater Standards

Response:

Promulgated standards for organic U and P wastewaters are being based on the wastewater treatment performance data used for setting BDAT for multi-source leachate wastewaters instead of incinerator scrubber water concentrations. BDAT for wastewaters containing U and P phenolic wastes is either biological treatment or carbon adsorption with the exception of 2-sec-butyl-4,6-dinitrophenol (P020) which has a BDAT of wet air oxidation followed by PACT. Where the Agency has biological treatment performance data that demonstrate substantial treatment, meet BDAT QA/QC requirements, and represent the "best" treatment performance data of those available, the Agency is using those data. Where biotreatment data for a certain constituent were not available or did not meet the requirements of "BDAT", data on a technology other than biotreatment were used as BDAT. For example, numerical treatment standards are also based on other forms of wastewater treatment that showed substantial treatment and meet BDAT requirements, such as carbon adsorption and wet air oxidation followed by PACT in the case of 2-sec-butyl-4,6-dinitrophenol.

As a final point, since concentration-based standards are being set for organic U and P wastewaters, industry may use technologies other than those specified as BDAT to treat their wastewater to the BDAT standard so long as the other technologies do not constitute impermissible dilution or land disposal. Thus, biological treatment is not precluded from use even if the basis of the concentration-based standard (BDAT) is a different technology.

Comment Number: 38-Aiii-3

Docket Number: LD12-00138

Commenter: OCCIDENTAL CHEMICAL CORPORATION

Issue: WASTEWATERS CONTAINING BDAT CONSTITUENTS

Subissue: BIOTREATMENT DATA AS BDAT FOR WASTEWATER STANDARDS

Comment:

C. Wet Air Oxidation, Powdered Activated Carbon (PACT), and Carbon Adsorption Are Not Required Wastewater Treatment Technologies for the Majority of "U" and "P" Phenolics. These Chemicals Can Be Removed to Detection Levels With Biological Treatment.

EPA states that it is collecting performance data for wet air oxidation, powdered activated carbon treatment (PACT), and carbon adsorption for treatment of wastewaters containing "U" and "P" phenolic wastes (54 Fed. Reg. 48412). The Agency indicates that it will probably use these data instead of the incinerator scrubber data presented in the proposed rule as BDAT standards for phenolic wastes.

As shown by the data presented in the Background Document for wastewaters containing BDAT list constituents (LD12-S1061), biological treatment provides demonstrated and effective treatment for most phenolics. Short-term tests of other treatment technologies, such as PACT, do not provide comparable demonstrations of long-term performance and should only be used if there are not adequate data in the Background Document for a particular "U" or "P" constituent.

OxyChem recommends that all wastewater treatment BDAT limits for "U" and "P" phenolic wastes be based on biological treatment, unless long-term data demonstrate that biodegradation of a phenolic constituent is impractical.

Comment Number: 38-Aiii-2

Document Number: LD12-00209

Commenter: Ethyl Corporation

Issue: Wastewaters Containing BDAT Constituents

Subissue: Biotreatment Data as BDAT for Wastewater Standards

Response:

Promulgated standards for organic U and P wastewaters are being based on the wastewater treatment performance data used for setting BDAT for multi-source leachate wastewaters instead of incinerator scrubber water concentrations. BDAT for phenol (U188) is biological treatment, BDAT for benzene (U019) is steam stripping, BDAT for toluene (U220) is steam stripping, and BDAT for xylenes (U239) is wet air oxidation. Where the Agency has biological treatment performance data that demonstrate substantial treatment, meet BDAT QA/QC requirements, and represent the "best" treatment performance data of those available, the Agency is using those data. Numerical treatment standards are also based on other forms of wastewater treatment that showed substantial treatment and meet BDAT requirements, as is the case for the constituents in U019, U220, and U239 where data on steam stripping and wet air oxidation were considered better data than those available on biological treatment.

As a final point, since concentration-based standards are being set for organic U and P wastewaters, industry may use technologies other than those specified as BDAT to treat their wastewater to the BDAT standard so long as the other technologies do not constitute impermissible dilution or land disposal. Thus, biological treatment is not precluded from use even if the basis of the concentration-based standard (BDAT) is a different technology.

Comment Number: 38-Aiii-2

Docket Number: LD12-00209

Commenter: ETHYL CORPORATION

Issue: WASTEWATERS CONTAINING BDAT CONSTITUENTS

Subissue: BIOTREATMENT DATA AS BDAT FOR WASTEWATER STANDARDS

Comment:

BDAT Treatment Standards for Biodegradable Organic Wastes (Wastewater Treatability Group)

The concentration of organic constituents in incinerator scrubber waters should not be the BDAT used to establish treatment standards for organic wastes which are readily biodegradable (for examples; benzene (U019), toluene (U220), and xylene(s) (U239)). These wastewaters are more appropriately treated by biological treatment, which should be used as the BDAT to establish treatment standards. Incineration of wastewaters with low levels of organic constituents will require large quantities of fuel; a gross misuse of the nation's energy reserves.

Comment Number: 38-Aiii-1

Document Number: LD12-00145

Commenter: Chemical Manufacturers Association

Issue: Wastewaters Containing BDAT Constituents

Subissue: Biotreatment Data as BDAT for Wastewater Standards

Response:

Promulgated standards for organic U and P wastewaters are being based on the wastewater treatment performance data used for setting BDAT for multi-source leachate wastewaters instead of incinerator scrubber water concentrations. BDAT for phenol (U188) is biological treatment, BDAT for benzene (U019) is steam stripping, BDAT for toluene (U220) is steam stripping, and BDAT for xylenes (U239) is wet air oxidation. Where the Agency has biological treatment performance data that demonstrate substantial treatment, meet BDAT QA/QC requirements, and represent the "best" treatment performance data of those available, the Agency is using those data. Numerical treatment standards are also based on other forms of wastewater treatment that showed substantial treatment and meet BDAT requirements, as is the case for the constituents in U019, U220, and U239 where data on steam stripping and wet air oxidation were considered better data than those available on biological treatment.

As a final point, since concentration-based standards are being set for organic U and P wastewaters, industry may use technologies other than those specified as BDAT to treat their wastewater to the BDAT standard so long as the other technologies do not constitute impermissible dilution or land disposal. Thus, biological treatment is not precluded from use even if the basis of the concentration-based standard (BDAT) is a different technology.

2/2

Comment Number: 38-Aiii-1

Docket Number: LD12-00145

Commenter: CHEMICAL MANUFACTURERS ASSOCIATION (continued)

Issue: WASTEWATERS CONTAINING BDAT CONSTITUENTS

Subissue: BIOTREATMENT DATA AS BDAT FOR WASTEWATER STANDARDS

Comment:

The Panel thus urges EPA to issue concentration-based treatment standards based on biological treatment.

1/ The Panel assumes that EPA will adhere to applicable notice and comment formalities if the Agency decides to change the treatment standard for phenolic wastes as a result of its ongoing consideration of additional treatment data. The Panel reserves its right to submit comment on this issue if such a change is made.

1/2

Comment Number: 38 - Aiii - 1

Docket Number: LD12 - 00145

Commenter: CHEMICAL MANUFACTURERS ASSOCIATION

Issue: WASTEWATERS CONTAINING BDAT CONSTITUENTS

Subissue: BIOTREATMENT DATA AS BDAT FOR WASTEWATER STANDARDS

Comment:

II. Wastewater Treatment Standards for P and U Phenolic Wastes Should be Based on Biological Treatment

EPA has proposed a treatment standard for U188 (phenol) wastewaters and nonwastewaters of 0.091 milligrams per liter ("mg/l") and 6.2 milligrams per kilogram ("mg/kg"), respectively. These standards are based upon performance data obtained from a rotary kiln incinerator test burn EPA performed in 1989.

EPA states that it is collecting additional performance data for treatment of wastewaters containing U and P phenolic wastes. See 54 Fed. Reg. 48412 (col. 1). EPA notes that it is considering using these wastewater treatment data rather than the incineration data on which the proposed wastewater treatment standards are based.1/

The Panel believes, and data in the Background Document for Wastewaters Containing BDAT List Constituents (LD12-S1061) clearly support the view that biological treatment is a demonstrated and highly effective treatment method for phenolic wastes. Data with respect to incinerator scrubber water and any other treatment technology EPA may now be considering are inadequate for purposes of demonstrating comparable and effective long-term performance. These data are limited and inadequate for purposes of establishing treatment standards for phenolic wastes.

cont.

Comment Number: 38-Aii-4

Docket Number: LD12-00166

Commenter: The Halogenated Solvents Industry Alliance (HSIA)

Issue: Wastewaters Containing BDAT Constituents

Subissue: Use of Multi-source Leachate Wastewater Standards for U,P,F,K, Wastewater Standards

Response:

The Agency agrees with the commenter that the wastewater treatment performance data used to set multi-source leachate BDAT wastewater standards should also be used to set organic U and P wastewater standards. This approach was presented as an option during proposal and is being promulgated for the Third Third Final Rule.

Additionally, the Agency has reconsidered the use of incinerator scrubber water data as the basis of treatment standards for F and K wastewaters. EPA is promulgating as part of the Third Third rule new wastewater standards based on wastewater treatment performance data for those F and K wastes included in Third Third Rulemaking for which the Agency proposed wastewater standards based on scrubber water concentrations.

As a final point, since concentration-based standards are being set for organic U and P wastewaters, industry may use technologies other than those specified as BDAT to treat their wastewater to the BDAT standard so long as the other technologies do not constitute impermissible dilution or land disposal.

Comment Number: 38-A11-4

Docket Number: LD12-00106

Commenter: The Halogenated Solvents Industry Alliance (HSIA) (continued)

Issue: Wastewaters Containing BDAT Constituents

Subissue: Use of Multi-source Leachate Wastewater Standards for U, P, F, K, Wastewater Standards

Comment:

EPA should adopt the alternative treatment standards based upon an analysis of wastewater treatment data from various sources, rather than the treatment standards based upon the detection limits for constituents of scrubber waters from incineration of K019 nonwastewaters. Treatment standards based upon the latter approach would not be based upon actual wastewater treatment data, but would essentially be theoretical constructs. While such an approach might be justified in order to avoid the May 1990 "hard hammer" prohibition on land disposal of scheduled wastes, it is neither required nor appropriate if suitable wastewater treatment data may be used to develop treatment standards.

1/2

Comment Number: 38-Aii-4

Docket Number: LD12-00166

Commenter: The Halogenated Solvents Industry Alliance (HSIA)

Issue: Wastewaters Containing BDAT Constituents

Subissue: Use of Multi-source Leachate Wastewater Standards for U, P, F, K, Wastewater Standards

Comment:

In the proposed rule for the Third Third wastes, EPA has proposed two sets of alternative treatment standards for the wastewater forms of certain P and U wastes, including the U wastes that correspond to the chlorinated solvents of primary concern to HSIA. One set of treatment standards has been calculated based on the detection limits of these constituents in scrubber waters from incineration of K019 nonwastewaters. The alternative treatment standards, which have been presented in the proposed rule as treatment standards for wastewater forms of multi-source leachate on a constituent basis, are based upon analysis of wastewater treatment data from various sources, including: (1) Office of Water data; (2) Hazardous Waste Engineering Research Laboratory data; (3) Office of Solid Waste BDAT data (from previous land disposal restriction rules); and (4) additional wastewater treatment data from literature articles.

cont.

Comment Number: 38-Aii-3

Docket Number: LD12-L0007

Commenter: The Chemical Manufacturers Association

Issue: Wastewaters Containing BDAT Constituents

Subissue: Use of Multi-source Leachate Wastewater Standards for U,P,F,K, Wastewater Standards

Response:

The Agency agrees with the commenter that the wastewater treatment performance data used to set multi-source leachate BDAT wastewater standards should also be used to set organic U and P wastewater standards. This approach was presented as an option during proposal and is being promulgated for the Third Third Final Rule.

Additionally, the Agency has reconsidered the use of incinerator scrubber water data as the basis of treatment standards for F and K wastewaters. EPA is promulgating as part of the Third Third rule new wastewater standards based on wastewater treatment performance data for those F and K wastes included in Third Third Rulemaking for which the Agency proposed wastewater standards based on scrubber water concentrations.

As a final point, since concentration-based standards are being set for organic U and P wastewaters, industry may use technologies other than those specified as BDAT to treat their wastewater to the BDAT standard so long as the other technologies do not constitute impermissible dilution or land disposal.

5/5

Comment Number: 38 - Aii - 3

Docket Number: LD12 - LD007

Commenter: THE CHEMICAL MANUFACTURERS ASSOCIATION (continued)

Issue: WASTEWATERS CONTAINING BDAT CONSTITUENTS

Subissue: USE OF MULTI-SOURCE LEACHATE WASTEWATER STANDARDS FOR U, P, F, K, WASTEWATER STANDARDS

Comment:

benzo(a)pyrene, benz(a)anthracene, chrysene, and fluoranthene (54 Fed. Reg. at 48,409); and phenol, 2,4-dimethyl phenol, 4,6-dinitro-o-cresol, and 4-nitrophenol (54 Fed. Reg. at 48,411).

As stated above, incineration is not BDAT for most wastewaters. EPA should not use incinerator scrubber water concentrations of hazardous constituents as the basis of BDAT constituents for any wastewater treatment standards, unless that scrubber water is from an incinerator that actually incinerates wastewater.

4/5

Comment Number: 38-Aii-3

Docket Number: LD12-L0007

Commenter: THE CHEMICAL MANUFACTURERS ASSOCIATION (continued)

Issue: WASTEWATERS CONTAINING BDAT CONSTITUENTS

Subissue: USE OF MULTI-SOURCE LEACHATE WASTEWATER STANDARDS FOR U, P, F, K, WASTEWATER STANDARDS

Comment:

D. EPA Should Base Wastewater Treatment Standards on Incinerator Scrubber Blowdown Data Only Under Certain Conditions.

In sections III.A.2. through III.A.6 (54 Fed. Reg. at 48,392 or 48,461), EPA proposes alternate wastewater BDAT standards that are developed from incinerator scrubber data for many waste codes. As the Agency has stated in the BDAT background document for multi-source leachates and in the preamble (see discussion in subsection B., supra), incinerator scrubber water is not representative of the achievable BDAT levels for a wastewater, since incinerator scrubber water represents treatment of a nonwastewater rather than a wastewater containing hazardous constituents.

Many of the chemicals that EPA has proposed scrubber water-based BDAT standards are documented to be removed to concentrations at the method detection limits (MDL) by biological treatment. Data developed for the organic chemicals, plastics, and synthetic fibers (OCPSF) point source category effluent limitations guidelines (Table VII-64, EPA-440/1-87/009) document that properly designed biological treatment systems meet BDAT for many organic chemicals in wastewater. Examples of such "U" and "P" Chemicals include benzene and toluene (54 Fed. Reg. at 48,408); naphthalene,

cont.

3/5

Comment Number: 38 - Aii -3

Docket Number: LD12- L0007

Commenter: THE CHEMICAL MANUFACTURERS ASSOCIATION (continued)

Issue: WASTEWATERS CONTAINING BDAT CONSTITUENTS

Subissue: USE OF MULTI-SOURCE LEACHATE WASTEWATER STANDARDS FOR U, P, F, K, WASTEWATER STANDARDS

Comment:

BTU/lb (Table 2-6, EPA/530-SW-88-031B). The scrubber water hazardous constituent concentrations reflect the effectiveness of the incineration on these nonwastewaters, and have no direct relationship to the effectiveness of incineration of a wastewater. To the best of CMA's knowledge, EPA has no data that demonstrate the effectiveness of incineration of wastewaters (less than 1 percent TOC and less than 1 percent TSS).

CMA does not believe that incineration represents BDAT for most wastewaters (containing less than 1 percent total organic carbon and less than 1 percent total suspended solids). Although some treaters may incinerate small volumes of wastewater containing less than 1 percent organics and suspended solids, this practice is not demonstrated technology for most wastewaters containing organics. Rather, wastewaters containing low concentrations of organic constituents are treated using biological treatment, activated carbon adsorption, or chemical oxidants, as is evident from the Office of Water's Industrial Technology Division (ITD) database.

cont.

Comment Number: 38 - Aii - 3

Docket Number: LD12 - L0007

Commenter: THE CHEMICAL MANUFACTURERS ASSOCIATION (continued)

Issue: WASTEWATERS CONTAINING BDAT CONSTITUENTS

Subissue: USE OF MULTI-SOURCE LEACHATE WASTEWATER STANDARDS FOR U, P, F, K, WASTEWATER STANDARDS

Comment:

This conclusion is true for all hazardous wastewaters, including scrubber water and leachates.

CMA strongly supports EPA's preference for using wastewater treatment system data in setting BDAT standards for wastewaters, in every instance where such data are available. Use of incinerator scrubber data to establish treatment standards could require incineration of large volumes of water, since incinerator scrubber water typically contains very low concentrations of organic hazardous constituents. This is not because an incinerator is especially effective at incinerating the hazardous constituents in a wastewater; it results from the fact that incineration of the nonwastewaters (generally with TOC and TSS concentrations much greater than the 1 percent nominal cutoffs used by EPA to define nonwastewaters) that were tested by EPA is relatively complete and that very low concentrations of these constituents carry over in the off-gases that are treated by the scrubber.

The incinerator scrubber water data that EPA has used to propose wastewater standards for many "P" and "U" wastes are taken from the Agency's incinerator tests on a mixture of K019 waste and mixed RCRA wastes. (EPA/530-SW-88-031B). The K019 waste that was incinerated contained 60.4 - 83.3 percent solids and had a heat content of 4,012 - 4,944

cont.

1/5

Comment Number: 38-Aii-3

Docket Number: LD12-L0007

Commenter: THE CHEMICAL MANUFACTURERS ASSOCIATION

Issue: WASTEWATERS CONTAINING BDAT CONSTITUENTS

Subissue: USE OF MULTI-SOURCE LEACHATE WASTEWATER STANDARDS FOR U, P, F, K, WASTEWATER STANDARDS

Comment:

C. CMA Supports the Use of Properly Qualified Wastewater Treatment Data for Developing BDAT Standards for Wastewaters. Treatment Standards for Wastewaters Should Not Be Based on Incinerator Scrubber Wastewaters Unless That Is the Source The of Wastewater.

The Agency proposes wastewater standards for many "U" and "P" listed wastes that are based on concentrations in incinerator scrubber waters (54 Fed. Reg. at 48,390/2). It has proposed alternate treatment standards for these wastewaters based on the performance of wastewater treatment systems using data obtained from the EPA Office of Water and other sources. These alternate standards are the treatment standards for multi-source leachate (54 Fed. Reg. at 48,461).

EPA's rationale for proposing standards based on incinerator scrubber blowdown is that: (1) in some cases it has no wastewater treatment data and (2) some waste treaters have indicated to the Agency that they did not wish to be precluded from incinerating wastewaters that are currently treated by this technology. EPA states its preference, however, for using wastewater treatment data for establishing standards for wastewaters. In the Background Document for wastewaters containing BDAT list constituents (LD12-S1061), EPA states that:

> In referring specifically to wastewaters (*i.e.*, leachates) the Agency does not consider incineration scrubber water data as representing performance of a specific wastewater treatment technology, since you would not normally incinerate a wastewater. (LD12-S1061, page 2-2).

Comment Number: 38-Aii-2

Docket Number: LD12-00224

Commenter: Texaco Inc.

Issue: Wastewaters Containing BDAT Constituents

Subissue: Use of Multi-source Leachate Wastewater Standards for U,P,F,K,
Wastewater Standards

Response:

The Agency agrees with the commenter that the wastewater treatment performance data used to set multi-source leachate BDAT wastewater standards should also be used to set organic U and P wastewater standards. This approach was presented as an option during proposal and is being promulgated for the Third Third Final Rule.

Additionally, the Agency has reconsidered the use of incinerator scrubber water data as the basis of treatment standards for F and K wastewaters. EPA is promulgating as part of the Third Third rule new wastewater standards based on wastewater treatment performance data for those F and K wastes included in Third Third Rulemaking for which the Agency proposed wastewater standards based on scrubber water concentrations.

As a final point, since concentration-based standards are being set for organic U and P wastewaters, industry may use technologies other than those specified as BDAT to treat their wastewater to the BDAT standard so long as the other technologies do not constitute impermissible dilution or land disposal.

Comment Number: 38-Aii-2

Docket Number: LD12-00224

Commenter: TEXACO INC.

Issue: WASTEWATERS CONTAINING BDAT CONSTITUENTS

Subissue: USE OF MULTI-SOURCE LEACHATE WASTEWATER STANDARDS FOR U, P, F, K, WASTEWATER STANDARDS

Comment:

In addition to being applicable to multi-source leachate, the wastewater standards should be applied to wastewaters for the U and P wastes (as proposed in III.A.1.h.(6)(b)), and to the F and K waste streams for which wastewater standards were previously established on the basis of incinerator scrubber water.

The above recommendation for establishing the alternative wastewater treatment standards based on actual wastewater treatment technologies (rather than incinerator scrubber water) for all the waste streams (F, K, U, and P) may actually minimize the risk to human health and the environment and at the same time further the Congressional goal of resource conservation. The current and proposed BDAT wastewater standards for the listed wastes which were based on incinerator scrubber water would force industry to incinerate large quantities of derived from listed hazardous wastes (leachates and contaminated groundwater).

In many cases alternative technologies such as chemical oxidation, biological degradation, and carbon adsorption would substantially reduce the toxicity of the wastewater stream and would not produce the pollution generated by the combustion of auxiliary fuel which would be required to incinerate a stream which may be 99.99999% water with the remaining 0.00001% being a compound which may be or not be a threat to human health, and the environment. At some point in the evaluation of the risk to human health and the environment, the pollution generated from the production of and the combustion of the auxiliary fuel could outweigh the reduction in risk between incineration and the alternative technologies.

Comment Number: 38-Aii-1

Docket Number: LD12-00168

Commenter: American Petroleum Institute

Issue: Wastewaters Containing BDAT Constituents

Subissue: Use of Multi-source Leachate Wastewater Standards for U,P,F,K,
Wastewater Standards

Response:

The Agency agrees with the commenter that the wastewater treatment performance data used to set multi-source leachate BDAT wastewater standards should also be used to set organic U and P wastewater standards. This approach was presented as an option during proposal and is being promulgated for the Third Third Final Rule.

Additionally, the Agency has reconsidered the use of incinerator scrubber water data as the basis of treatment standards for F and K wastewaters. EPA is promulgating as part of the Third Third rule new wastewater standards based on wastewater treatment performance data for those F and K wastes included in Third Third Rulemaking for which the Agency proposed wastewater standards based on scrubber water concentrations.

As a final point, since concentration-based standards are being set for organic U and P wastewaters, industry may use technologies other than those specified as BDAT to treat their wastewater to the BDAT standard so long as the other technologies do not constitute impermissible dilution or land disposal.

3/3

Comment Number: 38-Aii-1

Docket Number: LD12-00168

Commenter: AMERICAN PETROLEUM INSTITUTE (continued)

Issue: WASTEWATERS CONTAINING BDAT CONSTITUENTS

Subissue: USE OF MULTI-SOURCE LEACHATE WASTEWATER STANDARDS FOR U, P, F, K, WASTEWATER STANDARDS

Comment:

Alternative technologies may also offer resource conservation benefits since most of these technologies will not require the energy or fuel requirements that incineration would for aqueous streams. In the previous rulemaking on the BDAT treatment requirements for K048-K052 non-wastewaters (see Fed. Reg. 31159), EPA took into consideration the benefits of resource conservation with the inclusion of solvent extraction as BDAT. Previously EPA did not have the data necessary to evaluate the relative reductions in risk between incineration and alternative technologies for wastewaters. With the compilation of data from the Office of Drinking Water and that submitted by industry, EPA now has the opportunity to perform these risk evaluations taking into account the pollution generated by the combustion of auxiliary fuel and the benefits of resource conservation. API requests that EPA perform this evaluation at this time and repropose wastewater standards for the appropriate F and K wastes and the U and P wastewater streams, in addition to establishing wastewater treatment standards for multi-source leachate.

2/3

Comment Number: 38-Aii-1

Docket Number: LD12 - 00168

Commenter: AMERICAN PETROLEUM INSTITUTE (continued)

Issue: WASTEWATERS CONTAINING BDAT CONSTITUENTS

Subissue: USE OF MULTI-SOURCE LEACHATE WASTEWATER STANDARDS FOR U, P, F, K WASTEWATER STANDARDS

Comment:

Establishing the wastewater treatment standards based on actual wastewater treatment technologies (rather than incinerator scrubber water) for all the waste streams (F, K, U, and P) and leachate therefrom may actually minimize the risk to human health and the environment and at the same time further the congressional goal of resource conservation. The current and proposed BDAT wastewater standards for the listed wastes, which were based on incinerator scrubber water, would force industry to incinerate large quantities of "derived-from" listed hazardous wastes (leachates and contaminated groundwater). In many cases alternative technologies such as chemical oxidation, biological degradation, and carbon adsorption would substantially reduce the toxicity of the wastewater stream and would not produce the pollution generated by the combustion of auxiliary fuel which would be required to incinerate a stream which may consist of 99.99999% water and 0.00001% of a compound which may or may not be a threat to human health and the environment. At some point in the evaluation of the risk to human health and the environment, the pollution generated from the production of and the combustion of the auxiliary fuel could outweigh the reduction in risk between incineration and the alternative technologies.

cont.

1/3

Comment Number: 38-Aii-1

Docket Number: LD12-00168

Commenter: AMERICAN PETROLEUM INSTITUTE

Issue: WASTEWATERS CONTAINING BDAT CONSTITUENTS

Subissue: USE OF MULTI-SOURCE LEACHATE WASTEWATER STANDARDS FOR U, P, F, K, WASTEWATER STANDARDS

Comment:

In addition to being applicable to multi-source leachate, such wastewater standards also should be applied to wastewaters for the U and P wastes (as proposed in III.A.1.h.(6)(b)), and to the F and K waste streams for which wastewater standards were previously established on the basis of incinerator scrubber water.

cont.

Comment Number: 38-Ai-1

Docket Number: LD12-00194

Commenter: Rohm and Haas Company

Issue: Wastewaters Containing BDAT Constituents

Subissue: U and P Wastewater Standards Below de Minimis Levels

Response:

The commenter is incorrect in stating that the Agency requested comment on whether any of its proposed treatment standards are below levels where threats to human health and the environment are minimized. The Agency stated in 54 FRN 48382 that, "The Agency is also investigating "de minimis" levels for certain hazardous constituents in listed wastes below which the waste will no longer be a hazardous waste for purposes of subtitle C regulation. The Agency has yet to propose these "de minimis" levels; thus it has not completed its evaluation of the regulations that would be affected, in particular, the relationship of "de minimis" levels to treatment standards promulgated under the land disposal restrictions."

The commenter is referred to the Agency's explanation on this point in the February 26, 1990 Federal Register, as well as the Court's opinion in HWTC III, 886 F.2d 355 (D.C. Circuit 1989). EPA is adopting this same approach in the present rule until it can determine standardized de minimis levels for determining both when wastes are no longer hazardous and when threats are minimized. It should be noted that the standard for undertaking corrective action differs (and is more lenient than) from that in 3004(m) for establishing treatment standards, and thus does not require capping of treatment standards. HWTC III, 886 F.2d at 362.

EPA is promulgating organic U and P wastewater standards based on available EPA wastewater treatment performance data as well as data that was submitted by industry on the treatment of wastewater forms of multi-source leachate. The data used for setting these BDAT treatment standards show substantial treatment by the BDAT technologies and the Agency believes that these standards can be met on a consistent basis by well-designed and well-operated units.

Comment Number: 38-Ai-1

Docket Number: LD12-00194

Commenter: ROHM AND HAAS COMPANY (continued)

Issue: WASTEWATERS CONTAINING BDAT CONSTITUENTS

Subissue: U AND P .WASTEWATER STANDARDS BELOW DE MINIMIS LEVELS.

Comment:

Constituent	Corrective Action Trigger Level in Water (mg/l)	"U" and "P" Wastewater Treatment Standard (mg/l)	Multi-Source Leachate Wastewater Standard (mg/l)
1,1,1-Trichloroethane	0.2	.007 (U226, U227)	.054
1,2,4-Trichlorobenzene	0.7	NL	.046
2,3,4,6-Tetracholorophenol	1.1	NL	.051
2,4,5-Trichlorophenol	3.5	NL	.008
2,4 - Dichlorophenol	0.1	.052 (U081)	.076
Acetone	3.5	.25 (U002)	.162
Acetonitrile	0.21	H	.097
Endosulfan	0.0017	.00024 (P050 Endosulfan I) .00052 (P050 Endosulfan II, Endosulfan sulfate)	H
Methyl ethyl ketone	1.7	.14 (U159)	.016
Methyl isobutyl ketone	1.7	.028 (U161)	.032
Pentachloronitrobenzene	0.1	.096 (U185)	.040
Pentachlorophenol	1.0	.18 (U051)	.082
Phenol	1.4	.091 (U188)	.026
Pyridine	.035	.031 (U196)	.008
Toluene	10.	.028 (U051, U220)	.080
Xylenes	70.	.032 (U051, U239)	.182
Methoxyclor	0.1	.00036 (U247)	H

NL - there is no level
H - the level is higher than the corrective action trigger level

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Comment Number: 38-Ai-1

Docket Number: LD12-00194

Commenter: ROHM AND HAAS COMPANY (continued)

Issue: WASTEWATERS CONTAINING BDAT CONSTITUENTS

Subissue: U AND P WASTEWATER STANDARDS BELOW DE MINIMIS LEVELS

Comment:

third proposed rule overlap 59 constituents of concern on the corrective action trigger level table. Proposed treatment standards for multi-source leachate wastewater constituents overlap 71 constituents of concern on the corrective action trigger level table. Of these, 13 (22%) of the "U" and "P" constituents of concern have treatment standards below the trigger levels, and 15 (21%) of the multi-source leachate wastewater constituents of concern are below the trigger levels. These 13 and 15 treatment standards are per se unlawful and EPA should revise them. They appear on the next page:

cont.

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Comment Number: 38-Ai-1

Docket Number: LD12-00194

Commenter: ROHM AND HAAS COMPANY (continued)

Issue: WASTEWATERS CONTAINING BDAT CONSTITUENTS

Subissue: U AND P WASTEWATER STANDARDS BELOW DE MINIMIS LEVELS

Comment:

We wish to emphasize that these corrective action trigger levels are "extra conservative" for purposes of these comparisons since, if a waste is below these levels, it can be left in place. Moreover, these levels are essentially the same levels EPA is considering to use in its upcoming de minimis exclusion rule. Under the de minimis exclusion, if wastewaters below these levels are managed, they can be managed in a Subtitle D nonhazardous waste unit. In contrast, after a listed waste meets the proposed land ban treatment standards, it must still be managed in a Subtitle C hazardous waste unit where the stringent operation and design controls will minimize threats to human health and the environment.

We have compared the trigger levels in water to the wastewater treatment standards for the "U", "P", and multi-source leachate wastes. These comparisons present few problems because both standards relate to the aqueous form of the matrix and the treatment standards are not as variable as the standards for constituents in "F" and "K" wastes. Comparisons involving the nonwastewater standards and the "F" and "K" wastes, however, could and should be done by EPA.

What we found through this comparison is that constituents of concern in the "P" and "U" wastes in this third-

cont.

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Comment Number: 38-Ai-1

Docket Number: LD12-00194

Commenter: ROHM AND HAAS COMPANY (continued)

Issue: WASTEWATERS CONTAINING BDAT CONSTITUENTS

Subissue: U AND P WASTEWATER STANDARDS BELOW DE MINIMIS LEVELS

Comment:

action trigger levels." 4/ See Corrective Action for Solid Waste Management Units, 70-99, App. A (Sept. 12, 1988, draft proposed rule). If contamination equals or exceeds the trigger levels, then the owner/operator of a waste site will have to study the remediation options and remediate typically to the trigger levels. If the contamination is below the trigger levels, remediation studies and the remediation almost always will not be required. Id. at 72, 78-79.

EPA describes the action levels it plans to proposes for systemic toxicants as "a concentration to which the human population (including sensitive subgroups) could be exposed on a daily basis that is likely to be without appreciable risk of adverse effects during a lifetime." Id. at 78, see also 80. For carcinogens, EPA has chosen a risk range of 1 x 10^{-6} for Class A and B carcinogens and 1 x 10^{-5} for Class C carcinogens. "The 1 x 10^{-6} risk level translates to a probability of one in a million that an individual would contract some form of cancer in his or her lifetime because of the exposure in question. The true risk may be equal to or less than 1 x 10^{-6}, or be zero, but it is not likely to be greater than 1 x 10^{-6}." Id. at 80. These risk levels are often applied by EPA throughout its regulatory programs.

4/ Although EPA may choose to disregard these trigger levels because they have not been adopted in a final rule, at some point in the future EPA will have to reconcile these levels with the proposed treatment standards.

cont.

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Comment Number: 38-Ai-1

Docket Number: LDI2-00194

Commenter: ROHM AND HAAS COMPANY

Issue: WASTEWATERS CONTAINING BDAT CONSTITUENTS

Subissue: U AND P WASTEWATER STANDARDS BELOW DE MINIMIS LEVELS

Comment:

4. Over Twenty Percent Of The Proposed Wastewater Treatment Standards Are Unlawful Because They Are Below Minimum Threat Levels.

EPA requests comment on whether any of its proposed treatment standards are "below levels where threats to human health and the environment are minimized" -- the statutory standard in Section 3004(m). See 54 Fed. Reg. at 48,381/2. As explained below, over 20% of the proposed wastewater standards are below minimum threat levels and thus unlawful.

To reach this conclusion, one cannot simply compare the proposed treatment standards to a list of "minimum threat" levels. No such list exists. Nonetheless, EPA has developed several lists which, in effect, reflect minimum threat levels. Typically these lists are based on peer-reviewed studies of levels at which systemic toxicants have no effect and at which carcinogens could present a minimal risk typically in the range of 10^{-4} to 10^{-6}. Well-established exposure assumptions (e.g., 70 kg. adult consuming 2 liters of water per day over a 70 year lifetime) are then applied to these health/risk-based levels to obtain levels below which there are minimal threats. These levels are known as reference doses ("RFDs") for systemic toxicants and risk-specific doses ("RSDs") for carcinogens.

One such list EPA is about to propose in its corrective action rule under Section 3004(u) is the list of "corrective

cont.

ISSUE CODE 38: Wastewaters containing BDAT Constituents

A.-. U and P Wastewater Standards
    i. Wastewater Standards Below the de Minimus Levels
    ii. Use of MSL Wastewater Standards for U, P, F, K Wastewater Standards
    iii. Biotreatment Data as BDAT for Wastewater Standards
B.-. Wastewaters Containing BDAT List Constituents Document
    i. Data Screening
    ii. Demonstrated Technologies
    iii. Database Hierarchy
    iv. Variability Factors
    v. ITD Effluent Limits

Comment Number: 37-A-1

Docket Number: LD12-00124

Commenter: Rollins Environmental Services (DE) Inc.

Issue: K028, K029, K095, and K096

Subissue: Metal Standards

Response:

Nickel, chromium, and lead were present at treatable levels in the untreated F024. EPA conducted stabilization tests, using commercially available binders, to obtain treatment performance data for these constituents. The laboratories used to analyze the stabilized F024 waste samples are reliable and must maintain compliance with EPA's quality assurance/quality control requirements. Consequently, the resulting treatment standards developed based on these data appropriately reflect the level of treatment and analytical performance achievable for these metal constituents in F024 and based on the transfer arguments appropriately reflect the level of treatment and analytical performance achievable for these metal constituents in K028. The Agency has not received treatment performance data from the regulated community for K028, F024, or F024 co-burned with other wastes indicating that the proposed treatment standards cannot be met. Therefore, the Agency has no reason to believe that the treatment standards proposed for nickel, chromium, and lead in nonwastewater forms of K028 cannot be reliably met on a routine basis and is promulgating the treatment standards as proposed.

Comment Number: 37-A-1

Docket Number: LD12-00124

Commenter: ROLLINS ENVIRONMENTAL SERVICES, INC.

Issue: K028, K029, K095, K096

Subissue: METAL STANDARDS

Comment:

We also recommend that EPA review closely its proposed chromium, lead and nickel treatment standards for F024 (and K028). Those extremely low levels would probably effectively preclude the wastes from being accepted. Not only would the low levels prevent the waste from being co-burned with other wastes, but they would raise serious risks about the treatability of any subsequent incinerator clean-out ash and slag. The same applies to the identical nickel standard for K015.

ISSUE CODE 36: K017 - Wastes from the production of Epichlorohydrin

No Comments Were Received for this Waste Code